AGRICULTURAL MARKETS OF UTTAR PRADESH
— A SPATIAL ANALYSIS

Sponsored by

Indian Council of Social Science Research
New Delhi

Dr. R. S. DIXIT

ICSSR Senior Fellowship Awardee

Reader–Head

Post-Graduate Department of Geography

Isabella Thoburn College (Lucknow University)

Lucknow

Giri Institute of Development Studies
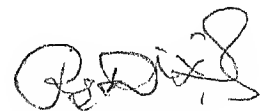### Lucknow

1998

ACKNOWLEDGEMENTS

Lucknow : 9 October, 1998

(R.S. DIXIT)

CONTENTS

Acknowledgements
Figures
Photographs
Tables

SECTION A
GENERAL

SECTION B
SPATIAL ANALYSIS OF REGULATED
AGRICULTURAL MARKETS OF U.P.

FIGURES

PHOTOGRAPHS

TABLES

SECTION A

GENERAL

1. PROLOGUE

1.1 OBJECTIVE

The first step of the present twelve-step series — the research report — is centered on achieving a two-fold objective — the presentation of (i) the design of the research work, and (ii) the glimpses of the study region, the state of Uttar Pradesh — as a geographical unit.

1.2 DESIGN OF THE RESEARCH WORK

1.2.1 TITLE AND THE STATEMENT OF THE PROBLEM

The title of the research work in hand is 'Agricultural Markets of Uttar Pradesh — A Spatial Analysis'.

No one lives in isolation. For the welfare of mankind, the most common yet scientific approach adopted in making of any study during the present time is that of inter-disciplinary/multi-disciplinary. Geography is both — a natural or a physical science, as well as a social science. It, actually, is a modern synthesis (of both the physical and the social sciences) as has been called by Prof. Peter Haggett. The problem or the research theme, in hand, the spatial analysis of (regulated) agricultural markets of Uttar Pradesh, ia basically, related to the geographical inquiry of an economic phenomenon, the regulated agricultural markets located in a particular state, U.P. The theme is closely associated with geography on the one hand, and economics on the other, thus, it is an aspect of economic geography in general while that of marketing geography in particular.

1.2.2 OBJECTIVE OF THE RESEARCH

The purpose of the proposed study, primarily, is to unfold the untold comprehensive analysis of the manifold spatial perspectives of the regulated agricultural markets (here after, called as RAMs) of the biggest state of the country, Uttar Pradesh.

More specifically and precisely, the nine-fold objectives of the research are as follows :

(i) to analyse market regulation and regulated agricultural markets of U.P. including their chronological growth;

(ii) to bring out the spatial distribution, distributional patterns of the markets, the distributional relationships of markets with the perspectives like area, population, number of inhabited villages, road-length, and marketable surplus;

(iii) in view of various characteristic features of RAMs, to develop an appropriate function for the classification of these markets;

(iv) to enquire into the various typologies based on major characteristic features of RAMs such as market site, sub-yards, periodicity, market openings, day-wise closings etc.

(v) to work out the centrality of markets and to develop the hierarchical tiers/ orders of these markets;

(vi) to discuss the theoretical trade areas of markets in terms of area, population, and the number of inhabited villages;

(vii)to present an answer to the question : Are there any spatial designs hidden behind the distribution of the first order, and the second order RAMs ?

(viii) to do a detailed study of Lucknow Mandi vis-a-vis primary data collected through detailed survey schedules; and

(ix) to highlight the major problems, and to put forth the suggestions solving these problems.

1.2.3 RATIONALE OF THE STUDY

The Indian economy is based on agriculture. Although the agricultural production of the country is constantly increasing yet the farmer could not get the maximum possible benefit out of it due to the existence of the middlemen applying various traditional (mal)practices in the process of sale of his produce. Thus, the traditional agricultural markets did not do justice with the farmers, rather, these functioned in the interest of traders and/or middlemen and therefore, the state intervention became inevitable in marketing of agricultural produce.

This state of affairs has given rise to the regulated agricultural markets. Hence, the geographical study of such markets of the largest populated state of the country i.e. U.P. has a great significance as such an analysis of these markets of U.P. would set an example for similar studies of other states of the country too for hardly such an analysis has been presented at the state level. It is important to mention that the present study has been done at the district level for the entire state — this, of course, is very special in this case as there has been a characteristic absence of such a research. Besides the disciplines of economics and commerce, there have been some studies in geography also, but, primarily, on marketing aspect, rather than on markets. Hence, the present work should be more significant in this respect.

Further, this study would also help in formulation of the government policy with regard to regulated markets on the basis of its findings especially in favour of the farmers. The study, thus, would help the development of the farmers in particular, and the entire nation in

general. In view of the fact, that the detailed analysis of the spatial perspectives of the regulated markets of U.P. has not been presented as yet, it is hoped that the present work should fill up the vacuum in this area of study on Uttar Pradesh.

1.2.4 OVERVIEW OF THE EXISTING LITERATURE

The existing body of knowledge about the analysis of the spatial perspectives of agricultural markets in India comprises only a few books, doctoral dissertations, project reports, and monographs authored by social scientists particularly economists, and geographers. In addition, some academics, planners, policy makers, and officials have also organized some seminars/ workshops/ conferences/ symposium on the related aspects and the proceedings consisting of the research papers of these academic meets have been published which form a substantial part of the existing literature on the theme under consideration.

Saxena (1992, pp. 9-13) has given a brief review of the work already done in this area of study. The various perspectives of market towns of Rajasthan have been analysed by him in his unpublished, Indian Council Social Science Research Project Report but his published work has taken up, especially, the perspectives like growth, spatial pattern, market yards, market areas, hierarchy, market efficiency, although in brief. Some significant aspects like typology, centrality, systems or spatial designs have completely been left out by him too. Some of the International Organizations like FAO, Food Research Institute, and Germatics Foundations for International Development have conducted some studies. The Food and Agricultural Organization (FAO) has also got published several studies like Food Marketing System in Asian Cities (1975), Planning and Operation of Wholesale Markets (1973), Agricultural Marketing in Iraq (1981), Marketing Inmprovement in Developing Countries (1986), Measuring the Effectiveness of

Agricultural Marketing in Contributing to Economic Development (William D. Jones, 1970), Regional Analysis and Agricultural Marketing Research in Tropical Africa (William D. Jones, 1974), and Agricultural Food Marketing in Socio-economic development (Lorenzyl,1978).

Besides, some edited works also contain good information on agricultural marketing, especially, in developing countries. The proceedings of INCOMAS, Vol. 1 entitled Marketing Systems in developing Countries (Izraeli, D. Izraeli, D.N. and Messner, F. eds.) has given a background about agricultural markets. Likewise, Buckling's (ed.1970), Vertical Marketing Systems is also an important study on marketing of various socio-economic areas of the world. A. Smith has edited a volume 'Regional Analysis' which also has some papers on agricultural marketing. Markets and Marketing in Developing Economies (Moyer and Hollander, eds. 1968) also has included some papers on agricultural marketing.

The most significant contributions on agricultural marketing come from Barbara Harriss as she has done extensive field work and that too, in India. Some of the very useful articles in this context are : Regulated food grain markets — A critique (1960), Role of Punjab markets as growth centres (1974), The distribution of agriculture merchantile power in Tamil Nadu (1981), Agricultural markets and intersectoral resource transfer (1985) etc. Her book 'State and Market' (1983) and a working paper 'How to study agricultural marketing and how not to study it' (Madras Institute of Development Studies) are certainly very useful classical works. A few of the other important studies are 'State Control of Marketing in Developing Countries' (Bauer, 1976), Marketing Agricultural Commodities in Pichencha Province, Equador (V. A. Smith), Agricultural Marketing in Africa (Whtham, 1972), Marketing of Agricultural Products in Punjab (Yaseen, 1976), Farmers and Traders in Hauseland (Clough, 1981), the Food Marketing System in China (Chongyyeong, Lee, 1980), Foodgrain Marketing in Burkina Faso

(Sherman, 1985), Whither Control Markets (Gopala Rao and Maheshwari, 1985), Impact of Market Access on Agricultural Productivity in India (Oppen, Rao, Subharao), Impact of Agricultural Markets on Income Distribution, (Bohle, 1985), Role of Agricultural Markets and Marketing Policy — Not conducive to Rural Welfare (Nadkarni, 1985), Public Intervention in Agricultural Markets in India (Verma, 1985), Agricultural Marketing Policy in U.A.R. (Hatahit, 1985). Kulkarni (1951), Aurobindo Ghosh (1962), and Wanmali (1980) also have presented some pioneering studies in agricultural marketing.

Amongst some other scholars and their studies, deserving mention are : Hussain (1937) presented the various perspectives relating to agricultural marketing in India, the nature of which had, primarily, been related to economics a few spatial perspectives related to North India like distribution of the activity also had been included in the work. Kulkarni (1951) discussed the same area of study in relation to India in general and parts of South India in particular. He brought out two volumes yet the spatial perspectives shared only a meagre part in both the cases. Prakashrao, (1961) took up the case study centred on Bhongiri market town which analysed the market participants and the goods in addition to spatial perspectives related to the market area. Johnson (1965) brought out a volume for the National Council of Applied Economic Research under the title, *Market Towns and Spatial Development in India*, in which he explained the role of these towns as 'the levers of development'. He also laid out some specifications about the identification of such towns. In addition, some examples from abroad such as Yugoslavia, Italy, Japan, and Puerto-Rico have also been cited. Johnson (1970) presented the organization of space in developing countries in which he included the spatial perspectives like market systems/designs, development of nodes, and the market area. Joshi (1971), of course, presented the regulated markets in Gujarat, but more economic perspective has been taken into account than the

spatial one. In 1979, Leon presented the picture of north India as also he discussed the commodities, and the agricultural produce that are brought by the farmers in these markets.

Ibrahim (1984) presented a work 'Market Centres and Regional Development". The work explains the efficiency of transport network and the role of market centres as regulators of commodity flows. The work is centered on the Delhi-Agra-Jaipur triangle — the traditional region of Mewat — one of the most backward parts of the country. The spatial patterns of mandi arrival, transport network and marketed surplus, and hierarchy of mandi centres have been discussed by him. Ibrahim has found that the region has a regular pattern of markets rather than random. In general, the Mandies' with high population number and important administrative centres have shown to have large marketed surplus. On the basis of commodities, there emerge ten types of mandies in the region. Also there is a close negative relationship between the number of arrivals and the distance from the mandi. On the basis of the composite score of nodal accessibility, there have been observed three hierarchical orders of the mandies.

Besides, a few dissertations have also been completed by the researchers in various universities in the country on the subject. Rao (1959) analysed the regulated markets of India with special reference to Andhra Pradesh but this study is, rather, particularly oriented to economic aspects. Kumavat (1973) discussed the market towns of the central Aravali region including a few spatial perspectives like distribution, classification, and trade area. Parvathi (1978) took up the case of Coimbator-Nilgiri region and explained the role of market and spatial development. Rathore (1979) presented a critical study in organization and working of regulated markets of Rajasthan, again from the point of view of economics. Vishwanath's (1979) study 'analysis of the wholesale marketing of grains and vegetables of Madras city'. Awasthi (1984) centered his study on *Market Towns and Spatial*

Development as a case study of Bhopal region which also included the aspects like distribution, and area. Singh (1984) also studied the regulated markets of eastern U.P., as a case study of wholesale marketing including the perspectives like distribution and marketing. A. Dixit (1996), of course, has taken up the spatial analysis of the mandies of U.P. This study has certainly included some vital perspectives like distribution, typology, hierarchy, trade area etc. However, she did not take up the spatial designs/systems, and any case study. Besides, she also presented only a brief analysis of the aspects undertaken. Further, although the state level study has been done but only at the administrative division level (each division includes several districts) hence the study does not bring out significant results at the district level rather, it highlights the aspects at the division level only.

The proceedings of the seminar published under the title *Market Towns and Spatial Development* (NCAER, 1972) has included some papers related to spatial aspects. A brief of the some is given below :

Warrior in 'Some problems of a public marketing agencies and their impact on the marketing development programme' has made an attempt to indicate some of the marketing problems faced by the Food Corporation of India functioning in regulated markets as an instrument for the support of the price under the situation of increasing agricultural production and surpluses. On planning and development of market towns, Selvam opines that various states should be divided into several regions and on the basis of the present unsatisfactory distribution of towns, the priorities should be drawn up after a proper survey by a particular agency. For determination of location of towns, a full view of needs of the particular area is required. Afterwards, the basic facilities like, communication, education, health, recreation, and necessary infrastructure should be developed. Practice, experience, and research would provide the answers to the problems which come-up with regard

to the development of these towns. Bhat, while suggesting a model for regional planning in India says that the real issue of the balanced regional development has often been clouded due to political pressure. Under the regional development policy on national planning, he points out that the country may be divided into 5 or 6 macro regions. The regional delineation should consider contiguity, inter-state and intra-state relationship and economies. The area development plans at the district and the block levels should have clear relationship with the land-use on the one hand while the integration of the villages around some significant settlements as the central points — the focal points — on the other. Bedekar. in course of his discussion centered on role of regulated markets in the development of rural areas has thrown light on progress of regulation, meaning of regulation of markets, promotion of orderly marketing, and the role of regulated markets in the development of rural areas. In the context of role, he has laid emphasis on construction of new market yards, feeder roads, development of storage facilities, sale of inputs and consumer goods and development of processing industries like rice mills, oil mills, sugar mills in the regulated markets. Rao (Prabhakar), and Rao (Rameshwar) discussing the criteria for selection of market towns in India have a two-fold objective in their research : elucidation of the main concepts in the theme and to provide some criteria for fostering of market towns. Especially for the location of such towns, the criteria may include the locations which can arrest the flow of men and materials to already congested centres, make full use of existing transportation facilities, and provide better ecological balance than the present urban areas. Garg analysing the reorientation of policy for the development of the market towns laid the emphasis on three aspects : development of an integrated service related to agricultural produce, warehousing facilities, and credit facilities; adequate expansion of the small industries; and drawing or attracting the attention of the neo-educated

people through financial help, education, entertainment, health, and important information about mechanical, technical, and other areas.

Talking about the development of the township with special reference to policy and problems, Lahiri presented the Israel's experience to explain the role of township in economic growth. He also gave the example of township development in socialistic countries. Bhowmik and Chaudhury presented their analysis of rural market and the system of mass communication. A rural market plays a great role in the socio-cultural setting of the region it belongs to. Bose, under the socio-economic basis of small town development, included the development of infrastructure, supplying adequate facilities of necessary inputs, changing the curricula of secondary education for the spread of modern agricultural technology, adult education scheme, and formation of cooperatives. Sirkar explained the role of market centres and regulated marketing in development process through laying emphasis on development of infrastructure, suitable marketing legislation, broad-based functions of the market committees, and a central market development corporation at the national level. Vishwanath opined about the establishment and development of rurban centres through suitable ordinances checking the flow of population to bigger cities, and establishing sub-urbs adjoining cities as also the satellite towns or market centres. Of these, the last one is the best remedy in the present context. Reddy has taken up the case of Rayalaseema region of Andhra Pradesh to illustrate the role of markets in the spatial development. The issue of markets is related to general economic and social development. Muthiah has explained the significance of the regulated markets in the development process through an example from Tamil Nadu. He showed that there has been a clear impact of the regulated markets on cropping pattern of the area in consideration. Farmers have been benefited through the practices in regulated markets. Andrade and Johnson discussed the role of market centres

and regulated marketing in the development process. They explained the theme with the example of Khanna market of Ludhiana district of Punjab. It is a big wheat market of the area. Samraha, another market is also located near Khanna, although, Samraha is, principally, an administrative and institutional centre. Singh highlighted the location of regulated markets of Punjab. He made a point that transport lines have greatly affected the locations. Bumb made a case study of Udaipur Mandi of Rajasthan and discussed its area of operation, location, system of sale, weighment, market charges, and market functionaries. This mandi that time had, however, no market yard and the middlemen were also there. Bawa, Srivastava, and Mishra made a case study of north Bihar in the context of market towns and spatial development. The north Bihar region is an agricultural region against the south Bihar region which characterizes in industrial development. The Kosi canal area, specially, has been taken for discuss on which has 11 market towns. The mode of transport is bullock cart but with the development of road network these carts are surely to be replaced by the motorized system. Maikap analysed the role of market centres in Indian economic development with special reference to West Bengal. He opined that the situation of market towns of West Bengal was worse as there was just one market for 11 or 12 villages in the state. He expressed that there was a great need for extensive market regulation. Taking up the case of Marathawada, Aherwadkar discussed the role of regulated marketing in development of marketing centres. The state of market has been, rather, much improved after regulation in this state. He took up the aspects like control of transactions, sale, deduction, weighment, grading facilities, and market intelligence service as also the role and functioning of market committees. Khan presented a descriptive analysis of market centres in Chevella Taluk in Andhra Pradesh. Here, the regulated markets are located on an average about 21 miles apart. The weekly market centres and their areas have been regarded as nodal sub-regions. Kahlon and Kehal have presented the market towns

of Punjab and their impact on rural development on the basis of field survey. It was observed that the farmers have the practice of using improved seed, and fertilizers as also they have been benefited by regulated markets in several other ways which, ultimately, has improved the life conditions of entire rural area. Talwar has also taken up the market towns of Punjab for study and found that the farmers' life conditions have so much improved that most of them have switched over from plough to mechanical farming.

The Third Indo-British Geography Seminar was held at Madras, Tirupathi, and Mysore in December, 1979. Three papers were directly related to the theme in consideration and these papers discussed the aspects like market place, trade area, and distribution of markets besides the other papers which studied other marketing issues from economist's view point. However, the topics of marketing problems and rural growth centre strategies were discussed in the seminar at length. One of the special feature of the seminar was a visit to the Mysore regulated market where inquiries were conducted into regulated markets and their benefits to small farmers. The above mentioned three papers are : State intervention in dry land foodgrain markets and price inequality in Andhra Pradesh and Karnatak States (Harriss, B.), Marketing as a catalyst in regional development — A case study of Karnatak (Jayashanker, D.C.) and The regulated and periodic systems of marketing of agricultural produce and their impact on rural development (Wanmali, S.).

In the workshop on Rural Market Centre Development Programme — Asian Regional Evaluation, Bangalore, FAO/DSE, 1980, the spatial aspects of periodic and regulated market systems in India as a case study was discussed at length (Singh, L.R.). The National workshop on Regulation and Management of Agricultural Produce Markets was organized by the Directorate of Marketing and Inspection at Ranchi (April, 1981), Faridabad, New Delhi, and Pune (May, 1982).

In Hyderabad, at International Crop Research Institute for the Semi-Arid. Tropics (ICRISAT) in cooperation with the Geography Department, Osmania University, and the International Geographical Union Working Group on Market Place Exchange Systems, an international workshop on the agricultural markets in the semi-arid tropics was organized in October, 1983.

The proceedings of the workshop have been published by the International Crops Research Institute for the Semi-Arid Tropics, Hyderabad in 1985 under the title '*Agricultural Markets in the Semi-Arid Tropics*'. The work consists of seven sections as :

(i) Agricultural market channels, (ii) Spatial organization of rural markets, (iii) The economic efficiency of agriculture, (iv) Equity aspects of agricultural markets, (v) The range of public interventions, (vi) Discussion, and (vii) issues and research recommendations.

In all, there are 38 research papers which have been included in the first five sections mentioned above. The first section includes 12 papers while the other four include 7,5,7, and 7 papers respectively. However, as far as it is related to spatial organization of agricultural markets, only a few papers are significant. Although, the second section has been devoted to spatial organization, but not of regulated agricultural, rather general, rural markets. These are papers which deal with the experiments on new methods and high production but not on the details of regulated agricultural markets. The papers, of course, are significant ones but from economic view-point and latest research in varied regions. Nearly all the papers on market centres deal with the traditional/periodic/weekly or general markets rather than regulated agricultural markets. Dixit has, although, taken up the aspect of spatial organization of market centres, but not of the regulated agricultural markets. Likewise, Wanmali has discussed some spatial considerations

related to networks of distribution of goods and services in rural India — but certainly not regulated agricultural markets.

M. von Oppen, P. Parathasarathy Rao, and K. V. Subba Rao, of course, have opined, while working on impact of market access on agricultural productivity in India, that the density of surfaced roads and the density of regulated markets have positive impact on production; 'the effect of markets on productivity increases at a decreasing rate; in areas of low market densities, returns from investments into markets can be expected to be very high' (p. 159). T.V.S. Rao and E.V.R.S. Subrahmanyam working on 'interlocking of credit and product markets and its impact on agricultural productivity' have taken up the case of Adoni and Chittoor regualted agricultural markets and have explained certain characteristic features like auctioning, malpractices, money lenders and their high rates of interests and transactions. V. T. Raju and B. D. Bhatt have discussed 'efficiency in pricing and operation of markets for semi-arid tropical crops in India — A case of groundnut in Gujarat'. They have taken up the cases of regulated markets with groundnut arrivals, around fifteen per cent of the total arrivals. They concluded that generally the price correlations between selected markets were, rather, high, positive and theoretically-statistically important. Nadkarni worked on 'role of agricultural markets and market policy — Not conducive to rural welfare'. Harriss working on 'agricultural markets and inter-sectoral resource transfers : cases from the semi-arid tropics of south-east India' focussed on intersectoral resource flows via the investments of private agricultural trade in a part of south-east India — north Arcot, and Coimbatore. Varma analysed the 'public interventions in agricultural markets in India'. He examined the effect of regulated markets, wholesale, urban, commodity and live stock markets on fair prices to the primary producer, governmental legislation, and the significance of market committees and market boards. The recruitment/training of market personnels and the quality

of products are also discussed by him. He stressed the need for proper planning and designing of markets.

In 1984, National Workshop on Regulation and Management of Agricultural Produce Markets was held at Jaipur in February in which Rao's study on impact of regulated markets and roads on productivity and market arrivals in Andhra Pradesh was discussed at length besides other papers. The Fourth National Workshop on Agricultural Markets was held in Lucknow in which the spatial organization and planning of agricultural markets in U.P., India, was especially discussed at length (Singh, L.R.) in1983. Ram (1980), and Nayak (1982) have made efforts to touch some aspects of these markets of the Lower Ganga-Ghaghara Doab, and the Saryupar Plain respectively. A few studies on agricultural markets are either in progress or are near completion in the universities of Avadh, Aligarh, and Gorakhpur. Surat and Lal (1988) have discussed the commercial characteristics like the quantum of trade and the sources of income of the agricultural mandies in eastern U.P. Dixit (1990, pp. 57) has mentioned various guidelines in respect of references on regulated agricultural markets alongwith urban and daily markets. Hugar (1992) analysed the locational character of Gulbarga district of Karnataka State. It is imperative to mention that only some (and not many) spatial aspects of market centres as such have been taken up only by a few researches at length such as Shrivastava (1987, 1988), Saxena (1980, 1988, 1992), Singh (1984), Dixit (1984, 1988, 1990, 1992, 1994), and A. Dixit (1996).

In conclusion, it is remarked that the studies on regulated markets of India have been conducted by a good number of scholars but in most of them only the socio-economic, and administrative/ organizational/ policy matters have been discussed at length. Despite this fact, the detailed analysis of the spatial perspectives of the regulated agricultural markets of Uttar Pradesh has not been taken up as yet.

1.2.5 CONCEPTUAL BACKGROUND

The spatial study of any area (i.e. a branch of knowledge) of study on the one hand and that of any area (i.e. the region) of study on the other highlights the true panorama of the existing conditions meaning thereby that it brings out the empirical status covering both the plus points i.e. the position/ the performance as one side of the coin while the minus points i.e. the problems/the deficiencies etc. as the other. The traditional agricultural markets have been functioning against the interests of the farmers, the actual producers of the agricultural produce. The Government of India, therefore, brought out Regulation Act about these markets in favour of the actual producer of the agricultural produce, the farmer. A certain area has a certain agricultural surplus against which the profit should go to the producers who live in that very area. The study of the dimensions of the regulated agricultural markets consists, primarily, of the distribution/location, typology, trade area/influence area, and hierarchy in particular. For example, the distributional perspective would take into consideration the number of such markets in relation to the area, population, etc. While the typology would take into account various characteristic features of markets. Likewise, the empirical perspectives would play a decisive role in case of the study of a mandi undertaken for the purpose.

1.2.6 RESEARCH HYPOTHESES

Within the analysis of the various spatial perspectives of the RAMs of the state of U.P., some key questions and/or hypothesis have either been discussed and/or tested. The major ones are as follows :

(I) There is no significant difference between the number of RAMs in various districts of the state,

(II)(a) The spatial distribution of RAMs in various districts of the state are clustered,

(b) The spatial distribution of RAMs in various districts of the state are regular,

(c) The spatial distribution of RAMs in various districts of the state are random.

(III) (a) The number of RAMs go according to the area in various districts of U.P.,

(b) The number of RAMs go according to the population in various districts of U.P.,

(c) The number of RAMs go according to the inhabited villages in various districts of U.P.,

(d) The number of RAMs go according to the marketable surplus in various districts of U.P.

1.2.7 COVERAGE IN RESEARCH

The coverage in the present study is as follows :

In terms of study area or the study region, it is the entire state of Uttar Pradesh at the district level; in terms of the number of markets, it is the total number of the regulated agricultural markets (main yards only). Thus, the traditional agricultural markets are not covered under the study. It is important to mention that the scholar in view of formulation of government policies in future for the development of agriculture, farmer and the area/region too, has decided to take up the study of all the 260 odd, 262 to be precise, regulated agricultural markets spreading over 63 districts of the state,. Thus, the analysis of the regulated agricultural markets has been covered at the district level.

The results of the study would present a clear picture of the phenomenon in U.P. For the purpose of case study, one of the most important mandies of the state — Lucknow — has been selected randomly.

In addition, it is also important to mention that the data covered in the present work mostly relate either to 1991 Census of India, or stand for the mid-1990's. Although, some data and information were available for the later years (including the latest 1998) but such data/information have been mentioned for reference only while the study is mainly based on the aforesaid data.

1.2.8 DATA COLLECTION

Since the study area is the entire state of Uttar Pradesh, besides, all the regulated agricultural markets of the entire state are under study, the data, primarily, is that of the secondary type which has been collected on various sub-themes of the research work from various sources. However, for the case study, the primary data has also been used and this type of data has been gathered at the particular regulated agricultural market site — the Lucknow Mandi.

I. Secondary Data

Archival research consultation has been done to collect the secondary data about India, U.P., divisions and districts of U.P, and the individual markets/towns relating to various perspectives of the agricultural markets such as regulation of markets in India, historical perspective of regulation of these markets in U.P., transport links between the markets and the villages, road-lengths and networks, the market days and the market periodicities (in a week) etc. from the U.P. State Mandi Parishad.

Besides, the data regarding India, U.P. divisions and districts of U.P., and the individual markets/villages/towns on population, area, agricultural area, road networks/lengths, and the distances between the related nodes etc. has been gathered from the Department of Census Operations in U.P., and the Yojna Bhavan — the Planning Department of U.P.

In addition, several departments like the Directorate of Agriculture, U.P. (particularly the marketing section), the State Planning Institute (particularly the department of economics and statistics, U.P.), the U.P. Transport Department, the U.P. Information and Public Relations Department, the Public Works Department (particularly the Research and Planning Section, U.P.), the Town and Country Planning, U.P., the State Gazetteer Department, the U.P. State Archives, and the libraries of other governmental and non-governmental agencies/research institutes/universities etc. have been consulted.

II. Primary Data

For want of cost and time, only one case study, centered on the Lucknow Mandi has been taken up and the primary information and data have been collected for the same. The nature of primary data consists of the information and statistics related to the market site has been carefully collected, in a free associational way with the market functionaries on the one hand while the producer-seller/farmer on the other. The information and data relating to the farmers, and their socio-economic aspects as well as their views or suggestions about improved working/functioning etc. have been collected directly.

The construction of market, organization and functioning of the market, the different types of crops/commodities, the volumes of the arrivals, collection of different types of fees, and other income, and the various problems faced by the functionaries and the suggestions for the

improvement etc. are the perspectives about which the data have been collected through the survey schedules in a free associational way, by prior appointment with the mandi officials.

Besides, personal observations about the functioning of the market, and the market visitors/participants have also been made.

1.2.9 MAPS/DIAGRAMS

All the maps/diagrams of the work have been drawn by the researcher. The boundary lines of the maps are based on the Survey of the India, and the Census of India maps. The various diagrams and models relevant to the theme have also been conceived, planned and prepared by the researcher.

1.2.10 METHODOLOGY

The treatise is based on collection, compilation, computation, analysis, and interpretation of data. It incorporates both the theoretical and the empirical approaches. The archival research, the field work, and the intensive laboratory exercises have resulted in clear understanding and discussion of the various perspectives of the markets under consideration. The appropriate theoretical/statistical techniques have been used especially for analysing the perspectives of distribution, hierarchy, and trade area of RAMs while empirical approach has been employed to unfold the untold affairs of the Lucknow Mandi. Exhaustive exercise have been done to expose the various typologies and spatial designs of RAMs of the state.

The collection of literature has been done through archival research in various libraries of the governmental and non-governmental agencies/department mentioned above.

The compilation of data is divided into two parts : the secondary data has been compiled from the various departments mentioned above whereas the primary data has been collected through personal observation, and interview method as per the three survey schedules made for the purpose. The participants of the marketing phenomenon in the Lucknow Mandi have been contacted. The sellers, the purchasers, and the mandi officials have given the information and the data related to the various desired perspectives about the case of Lucknow Mandi.

The data have been computed and analysed appropriately and the interpretation has been done taking up the cartographic representation into account.

1.2.11 CONTENTS OF THE WORK

The work 'Agricultural Markets of U.P. — A Spatial analysis has been divided into two broad sections : General, and Spatial Analysis of RAMs of U.P.

The first section is general in nature and it serves as the background for the main theme, the spatial analysis of RAMs of U.P. This section consists of 3 chapters ; Prologue, Development of Marketing Geography in India, and Market Regulation and Regulated Agricultural Markets in U.P. The second section, on the other hand, is centered on the main theme as mentioned above. This section comprises nine chapters on various significant perspectives of spatial analysis of regulated agricultural markets — RAMs — of U.P., such as, distribution, typology, hierarchy, trade area, etc. Thus, in all, there are twelve chapters in the work.

The first chapter aims at presenting the introductory write-up. It deals with the design of the entire research work on the one hand while the glimpses of the study region — the state of U.P. as a geographical unit

on the other. The second chapter is centred on the development of marketing geography in India. Since the theme of the work is on marketing geography, it has been thought proper to present a brief of the studies done in this field of geography in the country. It takes into account all the research papers published, research projects completed, research books published as also the academic meets and organizations and their work done in this field of geography in the country. The third chapter discusses the situation prevailing before the market regulation and the need of regulation of markets in the country. It also discusses in detail the coming up of the regulated markets in the state of U.P.

The fourth chapter is devoted to the distributional perspectives of the RAMs of U.P. such as the theoretical distribution, density of RAMs, spatial patterns of RAMs, as also the factors which have affected the distribution of these RAMs in the state. The fifth and the sixth chapters are centered on the analysis of the typologies of the RAMs from various significant characteristic features such as the market site, the modern facilities available in the market, the existence of sub-yards, periodicity, market openings, market closing days, nature of market settlements, population of market settlements, road-length, market fee collected annually, volume of crop arrivals during a year, and the marketed surplus. The seventh chapter includes the hierarchical tiers of these markets and the discussion of first, second, and third orders of the RAMs of the state. The eighth chapter is devoted to the trade area perspectives of the RAMs such as the trade area in terms of space/area, in terms of population, and in terms of number of inhabited villages. Besides, the trade area has also been discussed at the hierarchical level too. The chapter nine is centered on a very interesting spatial perspective — the designs. It includes the geometrical designs made by the RAMs of the state. The next chapter i.e., 10, again has been devoted to an interesting aspect — the case

study of one of the most important mandies of the state — Lucknow. The 11th chapter is on the problems and recommendation perspectives while chapter 12 gives a summary including the findings of the entire work.

1.2.12 SURVEY SCHEDULE

For the case study purpose, three survey schedules have been prepared. The first is on the Mandi centre itself under the title 'Regulated Market (Mandi) Information', The second one is on the 'Farmer (producer-seller) Information', while the third one is entitled 'Trader-Purchaser Information' (Appendix 1).

1.3 GLIMPSES OF THE STUDY REGION

The study region, Uttar Pradesh, is the largest state of the country in terms of population. Its population, as per 1991 Census, is 13.91 crore which is 16.44 per cent of the country. Out of this population, 7.40 crore are the males while the rest i.e. 6.51 crore form the female number. Uttar Pradesh is one of the border states of the country. Its northern border is along Tibet/China, and Nepal. As regards, physical area, the state stands fourth after Madhya Pradesh, Rajasthan, and Maharashtra in the country.

A brief of a few significant perspectives (U.P. Annual 1996-97) of the state is given below :

1.3.1 LOCATION AND AREA

The state is located between 23°52' N and 31°18' N latitudes; as also between 77°10' E and 89°39' E longitudes.

The state occupies an area of 2, 94, 411 km^2 which is 8.9 percent of the entire Indian Union.

1.3.2 PHYSICAL FEATURES

There are three distinct natural divisions of the state : The Himalayan Region in the north, the Gangetic Plain in the middle, and the Vindhyan Hills and Plateau Region in the south.

The Himalayan region is characterised by a number of mountain ranges which are highly folded and faulted and are made of sedimentary rocks of marine origin. Some of these ranges have important mountain peaks : Nanda Devi (7,817 m), Kamet (7,756 m), Badrinath (7,138 m), and Trishul (7,120m) . Upto the height of 1,500 m, the rainfall is abundant, while between 1500 m and 3000 m, there is continuous snowfall, during winter season. Beyond this height, the region is under perpetual snow. The rivers like Ganga, Yamuna, and Ram Ganga have come out of this region only. This region consists of certain area of Chakrata and Dehradun tehsils of Dehradun district, Nainital tehsil of Nainital district, and the hill districts of Almora, Pauri Garhwal, Tehri Garhwal, Pitthoragarh, Chamoli, and Uttarkashi.

The Gangetic Plain region occupies a large part of the state at the foot of Shivalik hills. Saharanpur district's northern part has a height of 300 m and above, while the rest of the state is below 300 m above sea level. There is a narrow belt from Saharanpur to Deoria known as Bhabhar and Terai. This area was once 80 - 90 km in width. It covers districts/parts of districts of Saharanpur, Bijnor, Nainital, Rampur, Bareilly, Pilibhit, Kheri, Bahraich, Gonda, Basti, Siddharthnagar, Gorakhpur, Maharajganj, and Deoria. This region has shrunken in width due to state government's land acquisition policy. The entire plain region to the south of Bhabhar and Terai is alluvial in nature. Excepting the eastern end of Aravali hills spreading over trans-Yamuna, Agra, and Mathura districts, the area is levelled. The plain has been formed during the Pleistocene and the later ages. The entire area is highly fertile.

The Vindhyan Hills and Plateau region is demarcated by the Yamuna and Ganga rivers. It consists of the districts of the Jhansi, Jalaun, Hamirpur,

Banda, and Sonbhadra; as also Meja and Karchhana tehsils of Allahabad district, a part of Mirzapur district lying south of river Ganga, and the Chakia tehsil of Varanasi district . This area is actually, the extension of the southern plateau of the country and its origin belongs to ancient period —the pre-Cambrian age. The height is not more than 300 m above sea level excepting a few areas/places like Kaimur and Sonpur hills in Mirzapur, and Sonbhadra districts (600 m). The general slope of the area is towards north-east. Ken, and Betwa, are the important rivers of this region. The region is characterised by synclines and anticlines.

1.3.3 CLIMATE

The climate varies according to height. The entire Himalayan region excepting the valleys, is cold and receives heavy snowfall from December to March. The sub-Himalayan belt — the terai belt — is humid and hazardous to health. The Plain region, broadly speaking, has temperature between 12.5°C (January) and 27.5° C (May) in general. The maximum and the minimum temperature during summer and winter seasons may touch even 45°C and 3.5°c respectively. The southern hills and plateau region is very hot in summers due to barren and rocky landscape while winters are cold.

There are three main seasons : Winter (October-February), Summer (March-June), and Rainy (July-September). The rain is mainly from the Bay of Bengal Monsoon during summers while from north-westerly cyclones during winters. On an average 100 - 200 cm rain occur in the Himalayan region about 100 cm in the sub-Himalayan belt. The western plain region has 60 - 100 cm while the eastern part of the plain has 100 - 120 cm. The southern hills of the state have about 100 cm rainfall. The state gets about 17 per cent of annual rain during winter while 83 per cent during summer. The type of rainfall is orographic. It increases from south to north and from west to east in general.

1.3.4 SOILS

The soils of the state are classified into three major classes : the forest and hill soils of the north, the alluvial soils of the plain region, and the mixed red and black soils of the plateau region.

Forest and hill soils are found in the northern mountain region, and the sub-mountain region. These soils are loam, brown, podsol, and meadow soils. While the first type is found in the slopes of hills and ridges, the second is, rather widespread, the third one is a characteristic soil of mid-slope gradient in the sub-tropical and the temperate zones, and the fourth is important to water streams. It varies from clay loam to sandy loam with calcareous and non-calcareous in between.

Alluvial soils are of two sub-types : the old alluvial (Bangar) and new alluvial (Khadar). These are found in the entire plain region. These soils are highly fertile and provide food to large population of the country.

Mixed red and black soils are available in the Jhansi division, Mirzapur and Sonbhadra districts, Meja and Karchhana tehsils of Allahabad district, and Chakia tehsil of Varanasi district. These are also known as 'Mar' and 'Kabar'. These are quite fertile also. Red soil is found on plateau tops and upper slopes. It is also of two subtypes : 'Parwa' and 'Rakar' — first is slightly sandy while the second one is an eroded soil.

1.3.5 POPULATION

The total population of U.P. as per the 1991 Census was 13,91,12,287 consisting of 7,40,36,957 males and 6,50,75,330 females. While the rural population of the state was 11,15,08,372 or 80.16 per cent, the urban component was 2,76,05,915 or 19.84 per cent. The decadal growth against the 1981 population has been 25.48 per cent as against 23.51 percent growth for the country as a whole. The percentage of U.P. population against the entire country is 16.44.

Allahabad was the biggest district with 49,21, 313 persons followed by Varanasi with 48,60,582 persons and the third being Deoria with 44,04,024 persons. The smallest population belongs to Uttarkashi district (2,39,709). Population of Allahabad stood the top and Uttarkashi population at the bottom in 1981 Census too. The three biggest cities were Kanpur (20,37,333), Lucknow (17,31,224), and Varanasi (13,22,248). Kanpur district had the highest urban population (84.24 per cent) followed by Lucknow (62.66 per cent), and Dehradun (50.26 per cent). The lowest urban population was in the Siddharthnagar district (3.48 per cent). The highest growth during 1981-91 has been in Ghaziabad district i.e. 98.23 per cent (of course, due to development of NOIDA — the New Okhla Industrial Development Authority.

The literacy percentage of the state was 41.60 during 1991 Census out of which males' literacy is 55.73 per cent while that of females is 25.31. The percentages for rural population and urban population are 36.66 and 61 respectively. In rural areas the male and female literacy percentages are 52.05 and 19.02 while those for the urban areas are 69.98 and 50.38.

The sex ratios during 1981 and 1991 have been 1000 : 885, and 1000 : 879. These figures for the rural and urban areas have been 1000 : 884, and 1000 : 860 for 1991.

The working population percentage in 1991 was 29.73. For the urban and rural areas the percentages have been 26.56 and 30.52 respectively. For the state, the males were 49.31 per cent while 7.45 per cent the females. These figures for rural area are 50.10 for males while 8.36 for females as against the urban areas the males were 46.19 per cent working against only 3.75 females.

As per the 1991 Census, the state's population had 21.05 per cent scheduled castes.

1.3.6 VEGETATION

The diversity in vegetation is because of various climatic conditions, and soils. The plain region has been having very rich vegetation but due to man's aggression, this area has reduced and only a few scattered patches of forest are located in this area now. The mountainous and sub-mountainous regions are, however, still rich in natural vegetation. There are 6 types of forests in the state as under :

I. Sub-Alpine and Alpine Forest

In the area between 2900 m and 3500m above sea level, the shrubs are : Juniper Fir, Honey Suckle, Artesmeria, Betula, and Birch. Beyond 3500 m above sea level are only a few dwarf shrubs.

II. Himalayan Moist Temperate Forest

In the areas between 1600m and 2900 m above sea level are mainly the evergreen trees and coniferous species — such as Deodar, Silver Fir, Quk, Beech, Birch, Chinar, Elm, Walnut, Maple etc.

III. Sub-Tropical Pine Forest

They are found between the Himalayan Moist Temperate Forest and Tropical Moist Deciduous Forests. Pine is the most important tree in this case.

IV. Tropical Moist Deciduous Forest

The moist region of Terai is well known for such forests, which need annual rainfall between 100 and 150 cm. The temperature should be 25 - 27°C with high humidity for such forests. The deciduous trees of different sizes grow in higher reaches while in lower areas are : Bamboo, Climbers, Sal, Ber, Gular, Jhingal, Palas, Mahua, Semal, Dhak, Amla, and Jamun.

V. Tropical Dry Deciduous Forest

This type forest has mostly been cleared by man for want of land for agriculture. The important trees are : Sal, Palas, Amaltas, Bel, Neem, Peepal, Sheesham, Mango, Jamun, Babool, and Imli with this type.

VI. Tropical Thorny Forests

The thorny trees are located in south-western part of the state which has annual rainfall below 70 cm. The important trees of this forest type are Babool, Khair, Phulai, Kokke, Dhaman, Danjha, Neem, and thorny bushes. These trees also provide different kinds of resins and gums too. The forest areas have low humidity. During rains short grasses also come up.

1.3.7 MINERALS

Minerals are lying in Uttar Pradesh hidden below a number of rocks of different geological times both in the northern Himalayan region as well as in the southern Vindhyan Ranges.

Some of the important minerals and their locations/districts are given below :

Limestone : DehraDun, Chakrata (Dehradun), Landsdowne (Garhwal), Guruma - Kanach - Bapuhari (Mirzapur), Kajrahat (Sonbhadra).

Dolomite : Mirzapur, Sonbhadra, Tehri Garhwal, Banda, Dehradun.

Magnesite and Soap Stone : Almora, Pithoragarh, Alaknanda Valley (Chamoli).

Copper : Pokhari, Dhampur (Chamoli), Nainital, Almora, Pauri Garhwal, Tehri Garhwal, Pithoragarh, Lalitpur.

Gypsum : Dehradun, Nainital, Tehri Garhwal.

Glass-sand : Karchhana (Allahabad), Karwi, and Mau (Banda).

Marble : Dehradun, Tehri Garhwal, Mirzapur, Sonbhadra.

Phosphoride : Tehri Garhwal, Dehradun, Mussoori (Dehradun).

Bauxite : Rajghewan (Banda).

Non-Plastic Fire-clay : Bansi, Makri-khoh (Mirzapur).

Uranium : Lalitpur

Most of the minerals are found mainly in nine northern and seven southern districts, viz., : Uttarkashi, Chamoli, Pithoragarh, Pauri Garhwal, Tehri Garhwal, Almora, Nainital, Dehradun, Agra, Lalitpur, Jhansi, Hamirpur, Banda, Allahabad, Mirzapur, and Sonbhadra.

1.3.9 AGRICULTURE

Agriculture form the main base of the economy of the state. There are 72.2 per cent agricultural workers out of all workers in U.P. The state government has taken various effective steps for development of agriculture such as extension of irrigation system, timely and adequate supply of fertilizers/pesticides/insecticides, and covering the largest possible area under high yielding varieties through promotion of improved seeds and the expertise and services to farmers. The state is laying importance on the extension of multi-crop area because of limited land available for agriculture. There has been a tremendous increase in use of fertilisers which was 24.80 lakh tonnes in 1994-95 but 26.05 lakh tonnes in 1995-96. The crop protection measures were taken in 272 lakh hectares in 1995-96.

A well equipped marketing network is a must for development of agriculture. Hence, under the U.P. Krishi Utpadan Mandi Act, 1964, the regulated mandis were set up. In 1965-66, there were only two such mandis which now have reached 263 (1998) figure with 381 sub-mandis which are attached to the (main) mandis. For controlling the functions of mandis, the State Krishi Utpadan Mandies Parishad was constituted in 1973. As much as 180.80 lakh

tonnes of foodgrains, vegetables, fruits etc. arrived in these mandis till March 1997 in 1996-97. Besides, construction work on 892 km soling, 904.72 km painted roads, and 559 culverts was completed till March 1997 in the year 1996-97. Out of 263 regulated mandis, — 182 of foodgrains and 35 of fruits/vegetables have also been constructed. Besides, out of 381 regularized sub-mandis, 72 have been constructed. A number of other facilities have also been provided at the mandis under various programmes/schemes.

1.3.10 TRANSPORTATION

The system of transport has played a key role in the all-round development of Uttar Pradesh. On May 15, 1947, the first nationalized U.P. Government Roadways started operating between Lucknow and Barabanki. In U.P., 22, 323 kms of P.W.D. roads have been nationalized which is 25.31 per cent of total motorable roads. The total length of roads during 1992-93, and 1993-94 have been 5,45,000 km and 5,90,000 km respectively.

The Public Works Department of the state has recorded the road-lengths per 100 km ^{2} in various districts of the state which may be divided into five classes as follows :

I. Upto 15 km

Chamoli (15.00), Sonbhadra (12.96);

II. 15 - 30 km

Pithoragarh (15.13), Uttarkashi (16.18), Shahjahanpur (29.63), Kheri (28.40), Bahraich (27.61), Lalitpur (23.89);

III. 30 - 45 km

Tehri Garhwal (32.59), Pauri Garhwal (40.91), Nainital (43.93), Hardwar (42.52), Moradabad (43.99), Pilibhit (38.41), Firozabad (39.47), Mainpuri (42.17), Hardoi (36.38), Sitapur (38.09), Unnao (38.08), Barabanki (45.09),

Budaun (35.78), Gonda (35.01), Siddharthnagar (30.44), Gorakhpur (33.78), Maharajganj (33.78), Fatehpur (36.84), Mirzapur (34.96), Jhansi (41.26), Jalaun (37.76), Hamirpur (23.47), Banda (24.37);

IV. 45 - 60 km

Dehradun (46.60), Almora (57.10), Saharanpur (52.07), Bullandshahr (55.40), Bijnor (55.73), Bareilly (52.72), Mathura (58.28), Agra (50.73), Etah (56.14), Etawah (46.65), Farrukhabad (46.06), Kanpur Dehat (46.97), Kanpur Nagar (57.93), Raebareli (50.99), Faizabad (48.57), Sultanpur (56.15), Basti (52.98), Azamgarh (55.71), Mau (56.33), Allahabad (45.68).

V. More than 60 km

Muzaffarnagar (78.09), Meerut (76.76), Ghaziabad (65.48), Rampur (64.46), Aligarh (62.46), Lucknow (68.35), Deoria (66.89), Jaunpur (67.36), Ballia (71.42), Pratapgarh (66.88), Varanasi (72.90), Ghazipur (67.81). (U.P. : Districtwise length of roads, pp. 77 - 80).

These data clearly show that the most of the districts, 23, have road-lengths from 30km to 45 km per 100 km^2 area followed by 22 districts with 45 - 60 km and further followed by 12 districts with road-lengths more than 60 km. per 100 km^2 area . The longest lengths are shared by five western U.P. districts; one, Lucknow, Central U.P.; and six eastern U.P. districts. The road-lengths below 30 km per 100 km^2 area are found in three hill districts, two districts of southern U.P. area, one western U.P. district, one central U.P. district, and one eastern U.P. district.

The Uttar Pradesh Annuals for 1994-95, 1995-96, and 1996-97 (first list, pp. 10 -11) have shown 14 Revenue/Administrative Divisions and 63 districts (Appendix 2 shows some of the basic data relating to these districts).

The five economic regions of the state are as under :

(i) Hill Region (Kumaon, and Garhwal Divisions),

(ii) Western Region (Agra, Meerut, Moradabad, and Bareilly Divisions),

(iii) Central Region (Kanpur, and Lucknow Divisions),

(iv) Eastern Region (Faizabad, Gorakhpur, Azamgarh, Varanasi, and Allahabad Divisions), and

(v) Bundelkhand Region (Jhansi division).

2. DEVELOPMENT OF MARKETING GEOGRAPHY IN INDIA

2.1 INTRODUCTION

Marketing geography is a new off-shoot from the trunk of geographical science. Marketing is a geographical phenomenon in the sense that the exchange of goods and services does manifest spatial dimension which provides raison d'tre for a geographic study of marketing. William Applebaum is regarded as the chief architect of marketing geography as a distinct field of study in the United States. He identified this sub-field during the early 1950s. Applebaum defined marketing geography as 'concerned with the delimitation and measurement of markets and with the channels of distribution through which goods move from producer to consumer' (1954, p. 246). During the early 1960s, R.E. Murphy laid great emphasis on the fact that marketing geography had come of age. Credit goes to Jr. Bromley (1971; 1974a, b; 1979) for presenting several lists on literature on marketing geography in the form of review and bibliographies during the 1970s. With the establishment of the International Geographical Union Working Group on Market Distribution System/Market Place Exchange Systems (1972-73), the formative process of marketing geography rapidly started taking place. Smith (1979, 1980) contributed to this sub-field by presenting two very significant papers on 'review and prospect'. In 1985, Gormsen edited the 15th Newsletter of the Working Group in which he included the bibliography compiled by Wayne MC Kim in this area of geography.

After the termination of the term of the Working Group on Market Place Exchange Systems (1984), a new unit "Geography of Commercial Activities", had come into being to continue the research activities as per approval of the General Conference of the International

Geographical Union held in Paris (1984). Later, this group converted into a Commission of the I.G.U. (1988). And under the banner of the "I.G.U. Commission : Geography of Commercial Activities".

This sub-field of geography has been developing in all its forms over the globe. Of late, in the International Geographical Union (I.G.U.) Congress held in the Haque in August 1996, the Commission's term has ended and a new study group "Globalisation of Retailing" has come into being under the chairmanship of Prof. Alain Metton (Paris, France) to study the various significant perspectives of retailing in the world. (I.G.U.) Newsletters, January (1997, 1998).

2.2 OBJECTIVE :

Since the theme of the research work, Agricultural Markets of U.P. — A Spatial Analysis, is a subject of marketing geography, it is better to present a brief of the developments which have taken place in this new area of the discipline of geography in the country.

The objective of the present endeavour, therefore, is to trace out the development of marketing geography in India including various significant perspectives of the development more precisely the documentational work, research papers/projects/books, academic needs and academic organisations.

2.3 DEVELOPMENT OF MARKETING GEOGRAPHY IN INDIA

The documentation works are the invaluable documents of marketing geography as these include the lists of references, reviews, bibliographies, and inventories on this area of study. On the basis of the entire literature given in these documents, the overall development or the progress taken place in respect of various dimensions can be presented systematically. The various significant dimensions are : research papers, research projects - both doctoral and non-doctoral

projects, text-book project and text-books, and research books on marketing geography. In addition to this, some light has also been thrown on other research activities relating to marketing geography viz., academic meets and academic organizations as well.

2.3.1 DOCUMENTATION ON THE LITERATURE

For tracing out the development of any area of study, it becomes imperative to make an in-depth study of the literature available in the particular branch of knowledge. It is only after going through the available literature that the details of development are prepared. Actually, there has been a major lacuna in the area of preparation or listing of bibliographies/inventories/reviews on marketing geography in the country. Of late, geographers in India have started taking interest in this sub-field of geography. It is Shafi (1972) who presented the first list of available literature on marketing geography although the paper concerned was not entirely on marketing geography only rather together with the geography of transport as well. Saxena (1977), of course, presented an independent review on this sub-field. The Indian Council of Social Science Research (ICCSR) has been working to promote the cause of social sciences and it brought out surveys on various disciplines of social sciences. Likewise in geography, too, it published three volumes on survey of research (in geography). In the first volume (1972), Shafi wrote the review in this sub-field along with the geography of transport., as has already been mentioned. During 1979, another volume of the survey came out with an article on "Geography of transport and marketing" by J. Singh which included hardly a few works on marketing geography in the discussion as also under the references. During the early 1980s, the Council again brought out another survey of research in geography in which Jayashanker (1984) wrote the review paper entitled 'Marketing geography'. However, the efforts made by scholars to present review

papers on marketing geography in the aforesaid surveys have been too short to present the list(s) of literature available in this sub-field of geography (The fourth volume on Survey of Research in Geography is being released shortly by the ICSSR). On the other hand, the articles/papers appeared in the journals, and/cr books have, of course, tried to dig out the works/literature on marketing geography.

In this direction, after the presentation by Saxena (1977), Sami (1980) wrote a conceptual review on the geography of retailing. Singh (1980), in his presidential address to the Indian Council of Geographers, presented a brief review on the subject. At the begining of the 1980s, Dixit and Verma presented the ever first long list on bibliographic material on marketing geography. Another effort was made by them in 1998 while they worked on a research paper, An inventory of bibliographies on geography of marketing and commercial activities in India. Sinha (1983, 1984, 1986) presented lists of works on marketing geography. Tiwari and Tripathi (1984) gave too brief a review on this sub-field. Dixit (1983, 1984, 1986, 1988, 1992) made indepth studies on producing the lists of references, reviews, bibliographies and inventories on the literature on marketing geography in India. He devoted one of his books totally to documentation on research information about geography of marketing and commercial activities in India (1990). Dixit is credited for producing the largest literature on this sub-field of geography, marketing geography (Gormsen, 1985, pp. 77-107; and Metton, 1989-90, pp. 190-92). Srivastava (1984) presented the progress made in the area of marketing geography in India while in an other effort he presented a trend report on geography of commercial activities (1988). Ahmad and Raza (1988) have also included this aspect in their discussion centered on the geography of India. Table 1 shows the list of reviews, bibliographies, and inventories on the literature on marketing geography in India arranged chronologically as well as alphabetically.

Table 2.1 : Reviews, Bibliographies, and Inventories

I. Chronological

DECADE/YEAR		AUTHOR	DECADE/YEAR		AUTHOR
1970s			1980s		
	1972	Shafi, M.		1986	Dixit, R.S.
	1975	ICSSR*		1986	Sinha, B.N.
	1977	Saxena, H.M.		1988	Ahmad, A. & Raza, M.
	1979	Singh, J.		1988	Dixit, R.S.
1980s				1988	Dixit, R.S. and Verma, D.N.
	1980	Dixit, R.S. & D.N. Verma		1988	Srivastava, V.K.
	1980	Sami, A.	1990s		
	1980	Singh, L. R.		1990	Dixit, R.S.
	1983	Dixit, R. S.		1992	Dixit, R.S.
	1983	Sinha, B. N.		1992	Dixit, R.S.
	1984	Dixit, R.S.			
	1984	Jayashanker, D.C.			
	1984	Sinha, B.N.			
	1984	Srivastava, V.K.			
	1984	Tiwari, R.C. and Tripathi, S.			

* The ICSSR is bringing out the ICSSR Journal of Abstracts and Reviews : Geography, since 1975 annually. Nineteen volumes have been out upto 1993.

II. Alphabetical

	AUTHOR	YEAR	TITLE OF WORK
1.	Ahmad, A. & M. Raza	1988	The Geography of India (1982-1987)
2.	Dixit, R.S.	1983	Marketing geography — A viewpoint
3.	Dixit, R.S.	1984	Marketing geography and Market centres
4.	Dixit, R.S.	1986	Geography of commercial activities — Furtherance of marketing geography
5.	Dixit, R.S.	1988	Marketing geography - Retrospect and prospect
6.	Dixit, R.S.	1998	Geography of marketing and commercial activities
7.	Dixit, R.S.	1992	Geography of commercial activities
8.	Dixit, R.S.	1992	Geography of commercial activities — Progress of studies of periodic marketing in India
9.	Dixit, R.S.	1997	Development of market geography in India (1970-1995), and also Development of marketing geography in India.
10.	Dixit, R.S. & D.N. Verma	1980	Marketing geography — A bibliographic note
11.	Dixit, R.S. & D. N. Verma	1988	An inventory of bibliographies on geography of marketing and commercial activities in India

12.	ICSSR	1975	ICSSR Journal of Abstracts and Reviews : Geography (Annual Volumes) 1975-1993
13.	Jayashankar, D.C.	1984	Marketing geography
14.	Sami, A.	1980	The Geography of retailing — A conceptual review
15.	Saxena, H.M.	1970	Marketing geography — A review
16.	Shafi, M.	1972	Geography of transport and marketing
17.	Singh, J.	1979	Geography of transport and marketing
18.	Singh, L.R.(ed.)	1980	Recent trends in Indian geography
19.	Sinha, B.N. (ed.)	1983	Progress of Geographical Research in India
20.	Sinha, B.N. (ed.)	1984	Progress of Geographical Research in India
21.	Sinha, B.N. (ed.)	1986	Trends in Geographical Research in India
22.	Srivastava, V.K.	1984	Progress of Marketing geography in India
23.	Srivastava, V.K.	1988	Geography of commercial activities — A trend report
24.	Tiwari, R.C. & Tripathi, S.	1984	Vipnan Bhugol

Besides, the task of publishing the abstracts of research papers published in various research journals has also been taken up by scholars and governmental organization(s). In this connection, two references are of utmost significance. The first, edited by A. Ahmad and M. Raza on the occasion of the 26th International Geographical Congress held in Sydney in 1988, and the second, The Indian Council of Social Science Research, New Delhi, ICSSR Journal of Abstracts and Reviews : Geography (Vol. 1, 1975 to 1993 Vol. 19, 1993). These publications have included various sections on various branches of geography giving the abstracts of papers with complete reference to each paper. Thus, marketing geography has also been included as a Section alongwith transportation and communication both by the scholars as well as by the ICSSR. The ICSSR has till now published nineteen volumes (upto 1993) of its journal on Geography. These journals have also included, at the end, the author-wise index and the region-wise index too. These publications have played equally a great role in documentation on research information on marketing geography in the country.

2.3.2 RESEARCH PAPERS

Following an archival research, the author has come across 518 research papers including published papers, short papers, abstracts and unpublished papers contributed to the sub-field of marketing geography by the Indian scholars. The inventory has been developed in the form of typologies based on sub-themes of the research papers in two ways :

The first typology presents a chronological panorama of papers under 16 different perspectives of market studies, viz., 1. Role, 2. Origin/Evolution, 3. Location/Distribution, 4. Transport Network, 5. Typology, 6. Centrally/Hierarchy, 7. Trade Area, 8. Structure/Morphology, 9. Consumer/Trader Behaviour, 10. Synchronization/Rings/Cycles, 11. Traditional Exchange and Periodic Marketing, 12. Urban or Daily and Agricultural or Regulated Markets, 13. Function, 14. Goods/Commodities, 15. Planning, and 16. Others. The thematic typology has been considered as an integral part of marketing studies. Gormsen (1985), Metton (1989-90), and Dixit (1990) have adopted this approach in tracing out the development or progress of studies on marketing geography. The second typology, on the other hand, reveals the contribution including author's names under the same 16 perspectives mentioned above. It is important to note that most of the articles have appeared during the last two decades i.e., 1970s and 1980s. Tables 2 i and 2 ii illustrate these points clearly.

The tables show that upto the last decade, the largest number of articles on a particular topic was written on location/distribution, the number being 142. Second to this was the aspect relating to the

Table 2.2 : Thematic Typology of Research Papers

I. Decade-wise

Decade	No. of papers	No. of Perspectives	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1930s	8	5	-	-	4	-	-	-	3	-	-	-	3	-	-	5	-	2
1940s	8	7	-	-	5	-	-	-	3	-	-	-	5	2	1	5	-	1
1950s	8	6	-	2	4	-	-	-	4	-	-	-	5	-	-	4	-	3
1960s	33	15	9	14	23	6	3	1	19	3	3	-	9	6	8	13	2	5
1970s	127	16	24	33	47	10	8	15	25	20	10	7	35	32	18	15	37	45
1980s	214	16	45	36	59	19	28	25	27	18	30	36	79	53	16	24	32	70
1990-1995	120 only	Not classified																
Total	518	16	78	85	142	35	39	41	81	41	43	43	136	93	43	66	71	126

1. Role, 2. Origin/Evolution, 3. Location/Distribution, 4. Transport Network, 5. Typology, 6. Centrality/hierarchy, 7. Trade Area, 8. Structure/Morphology, 9. Consumer/Trader Behaviour, 10. Synchronization/Cycles, 11. Traditional Exchange, 12. Urban/Regulated, 13 Function, 14. Goods/Commodities, 15. Planning, 16. Others.

II. Author-wise

Role	78	DRS (11), SBK(3), TBG (3), VSC (2), NCAER(2), INDIA (9) = 31+47 others (1 Each
2. Origin	85	DRS(10), SA(4), TBG(6), SVK(3), BKVS(2), SS(2), INDIA(9) = 34 + 51 OTHERS (1 EACH)
3.Location	142	DRS(14), SVK(6), TBG, KV(3), SKR(3), RBP(3), SE(3), JAG(2), JMM(2), PC(2), SU(2), WS(2), SHM(2), CAER(2), INDIA (9) = 63 + 79 (1 EACH)
Transport Network	35	DRS(6), TBG(5), INDIA(9) = 20 + 15 OTHERS (1 EACH)
Typology	39	DRS(14), TBG(3), SVK(2), INDIA(9) = 28 + 11 (1 EACH)
Centrality	41	DRS(9), SVK(3), SH0(2), SLR(2), INDIA(9) = 25+16

		(1 EACH)
Trade Area	81	DRS(9), DAK(3), RBP(2), ASM(2), CAB(2), KG(2), SHM(2), SU(2), INDIA(9) = 33 + 48 OTHERS (1 EACH)
Structure	41	PC(3), SHM(3), SA(2), SJP(2), INDIA(9) = 19 + 22
Consumer/Trader Behaviour	43	DRS(6), DAK(4), SVK(3), CK(2), GDA(2), TBG(2), INDIA (9) = 28 + 15 OTHERS (1 EACH)
Synchronisation	43	DRS(14), SVK(3), TBG(3), GAD(2), INDIA(9) = 31+12 OTHERS (1 EACH)
Traditional Exchange	136	TBG (12), DRS(10), SVK(5), GDA(5), KV(3), SHM(3), SKR(3), WS(3), SF(3), CK(2), JAG(2), GK(2), TRC(2), RPP(2), INDIA(9) = 66 + 70 OTHER (1 EACH)
Urban/Regulated	93	DRS(6), SA(5), DAK(3), SHM(3), SLR(3), GPK(2), RKVS(2), RPP(2), WS(2), INDIA(9) = 37 + 56
Function	43	DRS(2), SA(2), INDIA(9) = 13 + 30 OTHERS (1 EACH)
Goods	66	RKC(2), RBP(2), SU(2), WS(2), INDIA(9) = 17 + 49
Planning	71	DRS(6), SLR(3), GPK(2), WS(2), NCAER(4), INDIA(9) = 26
Others	126	DRS(9), TBG(7), SVK(6), SA(3), SLR(3), VSC(2), SSB(2), RPB(2), SKR(2), JDC(2), INDIA(9) = 52 + 74.

ABBREVIATIONS : ASM (Alam, S.M.), CK (Chandran, K.), CAB (Chatterjee, A.B.), DRS (Dixit, R.S.), DAK (Dutta, A.K.), GDA (Gedam, D.A.), GPK (Gupta, P.K.), JAG (Jamkar, A.G.), JMM(Jana, M.M.), JDC (Jayashankar, D.C.), KG (Krishnan, G.), PC(Parvathi, C.), RKS (Ramkrishna, K.C.), RBP (Rai, B.P.), RKVS (Rao, K.V.S.), RPP(Rao, P.P.), SA (Sami, A.), SHM (Saxena, H.M.), SJP (Singh, J.P.) SLR (Singh, L.R.), SSB (Singh, S.B.), S.U. (Singh, U.), SHO (Srivastava, H.O.), SKR (Srivastava, K.R.), SVK (Srivastava, V.K.), SS (Subbaih, S.), SE (Swaminathan, E.), TBG (Tamaskar, B.G.), TRC (Tiwari, R.C.), VSC (Verma, S.C.), WS (Wanmali, S.).

traditional exchange (136). On the other hand transport network, typology, centrality and hierarchy, trade area, structure/morphology, consumer/trader behaviour, synchronization and functional analysis of market centres have attracted a few scholars only. Thus, it has been observed that a large number of papers dealt with a few particular

topics, while a few number of papers dealt with a large number of topics. As far as it is related to decadewise progress while 1930s, 1940s, and 1950s saw only 8 papers each, the 1960s, 1970s and 1980s have given 33, 127 and 214 papers respectively. This clearly shows that there has been a tremendous increase in the number of studies in form of research papers. In his latest effort, Dixit (1997) has presented the development of marketing geography in India (especially) during 1970-1995 i.e. a quarter of century.

2.3.3 RESEARCH PROJECTS

It is another aspect of development of studies on marketing geography. The successful completion of research projects on marketing geography has added a lot to the development of this area of study. There are two types of research projects : one, which is related to the award of a university degree like a post-graduate degree or a doctoral degree, and the other one which is a post-doctoral, and other projects - not related to the award of any university degree.

Table 2.3. : Research Project Reports : Dissertations

I. Decade-wise

Sl. No.	Decade	Year	Scholar
1.	1950s:	1958	Singh, S.M.(M.A.), B.H.U.
2.		1959	Rao, R. (D. Phil.), Allahabad University
3.	1960s:	1962	Singh, K.N. (Ph.D.), B.H.U.
4.		1964	Barnum, H. (Ph.D.), Berkley University
5.		1964	Sinha, D.P. (Ph.D.), South Illinois University
6.		1966	Vishwanath, M.S., (Ph.D.),B.H.U.
7.		1968	Sinha, M.K. (M.C.P.), I.I.T., Kharagpur
8.	1970s :	1971	Saxena, H.M. (Ph.D.), Udaipur University
9.		1973	Kumavat, B.L. (Ph.D.), Udaipur University
10.		1975	Sami, A. (Ph.D.), Rajasthan University

11.		1976	Nolakha, R.L. (Ph.D.), Rajasthan University
12.		1977	Geetha, T. (M.Phil.), Madurai University
13.		1977	Swaminathan, F. (Ph.D.), Madras University
14.		1978	Chandran, K. (M.Phil.), Madurai University
15.		1978	Gedam, D.A. (Ph.D.), Nagpur University
16.		1978	Parvathi, C. (Ph.D.), Cambridge University
17.		1978	Wanmali, S. (Ph.D.), Cambridge University
18.		1979	Maidamwar, G.T. (Ph.D.), Nagpur University
19.		1979	Rathore, N.S. (Ph.D.), Udaipur University
20.		1979	Vishwanath, V.V. (Ph.D.), Madras University
21.		1979	Dixit, R.S. (Ph.D.), Allahabad University
22.	1980s:	1980	Mohanty, S.K. (Ph.D.), Allahabad University
23.		1980	Srivastava, H.O. (Ph.D.), Gorakhpur University
24.		1982	Ram, U. (Ph.D.). Gorakhpur University
25.		1983	Nath, V. (Ph.D.), Gorakhput University
26.		1983	Sharma, P.K. (Ph.D.), Utkal University
27.		1983	Srivastava, K.R. (Ph.D.), Jabalpur University
28.		1984	Awasthi, N. (Ph.D.), Bhagalpur University
29.		1984	Hugar, S.I. (Ph.D.), Dharwad University
30.		1984	Ibrahim. R. (Ph.D.) Delhi University
31.		1987	Verma, R.D. (Ph.D.), Bhagalpur University
32.		1987	Tiwari, K.N. (Ph.D.), Dharwad University
33.		1988	Jain, A.K. (Ph.D.), Sagar University
34.		1986	Surat, R. (Ph.D.), Sagar University
35.		1986	Nath, T. (Ph.D.), Gorakhpur University
36.		1989	Khan, N. (Ph.D.), Aligarh Muslim University
37.	1990s:	1991	Talikoti, N.B., (Ph.D.), Shivaji University
38.		1992	Lal, N. (Ph.D.), Gorakhpur University
39.		1992	Trivedi, V. (Ph.D.) , Indore University
40.		1993	Singh, C.S. (Ph.D.), Gorakhpur University
41.		1994	Chandra, A. (Ph.D.), Gorakhpur University
42.		1994	Marugain, P. K. (Ph.D.) Jamia Millia Islamia University.
43.		1995	Srivastava, R.K. (Ph.D.), Avadh University
44.		1996	Chaturvedi, U. (Ph.D.), Avadh University
45.		1996	Dixit, A. (Ph. D.), Avadh University.

II. University-wise

University	No. of Dissertations	Scholar/Year
Allahabad	2	Dixit, R.S., 1979; Rao, R. 1959
Aligarh	1	Khan, N., 1989
Avadh	3	Srivastava, R.K., 1995; Dixit, A., 1996; Chaturvedi, U., 1996;
B.H.U.	3	Singh, S.N., 1958; Singh, K.N., 1962; Vishwanath, M.S., 1996
Bhopal	1	Awasthi, N., 1984
Bhubaneshwar	2	Mohanty, S.K., 1980; Sharma, P.K., 1983.
Berkley	1	Barnum, H., 1964
Cambridge	1	Wanmali, S., 1978
Delhi	1	Ibrahim, R. 1984
Jamia Millia Islamia	1	Marugain, P.K., 1994
Dharwad	1	Hugar, S.I., 1984
Gorakhpur	9	Srivastava, H.O., 1980; Ram, V., 1982; Nath, V., 1983; Nath, T., 1986; Surat, R., 1986; Tiwari, K.N., 1987; Lal, N., 1992; Singh, C.S., 1993; Chandra, A., 1994.
Illinois	1	Sinha, D.P., 1964
Indore	1	Trivedi, V., 1992
Kanpur	1	Verma, R.D., 1987.
Kharagpur	1	Sinha, M.K., 1968
Madras	3	Geetha, T., 1977; Vishwanath, V.V., 1979; Swaminathan, F., 1976
Madurai	1	Chandra, K., 1978
Mysore	1	Parvathi, Parvathi, C., 1978
Nagpur	2	Gedam, D.A., 1978; Maidamwar, G.T., 1979
Patna	1	Sami, A., 1975
Rajasthan	1	Nolakha, R.L., 1976
Sagar	1	Jain, A.K., 1988
Shivaji	1	Talikoti, N.B., 1991
Udaipur	3	Saxena, H.M., 1971; Kumavat, B.L., 1973; Rathore, N.S., 1979.

Table 2.4 : Research Project Reports : Other than Dissertations

Sl. No.	Decade	Year	Scholar	Sponsoring Department/Institute, etc.
1.	1960s:	1961	Prakash Rao, V.L.S.	Ministry of Health, New Delhi
2.		1967	Khan, W.	Metropolitan Research, Hyderabad
3.	1970s:	1970	Karwe, I. & Acharya, H.	ICSSR, New Delhi
4.		1971	Joshi, V.K.	S.P. University
5.		1979	Tamaskar, B.G.	U.G.C., New Delhi
6.	1980s:	1980	Saxena, H.M.	ICSSR, New Delhi
7.		1980	Patil, S.P. & Pawar, J.R.	Mahatona Phule Krishi, Bombay
8.		1980	Raju, V.T. & Oppe, Von M.	ICRISAT, Hyderabad
9.		1982	Raju, V.T. & Oppen, von M.	CRISAT, Hyderabad
10.		1982	Srivastava, V.K.	ICSSR, New Delhi
11.		1983	Wanmali, S.	IFRI, Washington, D.C.
12.		1984	Dixit, R.S., IC	ICSSR, New Delhi
13.		1988	Dixit, R.S.	ICSSR, New Delhi
14.		1989	Dixit, R.S.	UGC, New Delhi
15.	1990s:	1990	Saxena, H.M.	ICSSR, New Delhi
16.		1991	Dixit, R.S.	Nagoya University, (Japan)
17.		1994	Hugar, S.I.	ICSSR, New Delhi

The author has traced some significant dissertations related to the award of university degrees which have been shown in Table 3(i) and (ii). Table 3 (i) shows the chronological list of dissertations, mostly doctoral ones. Nearly four dozens of such dissertations have been completed in the area of marketing geography in various universities, at least two dozens in number. To be exact, there are two M. Phil., one M.A., one M.C.P., and the rest Ph. D. dissertations in the list. Also the research contributions in this direction, although, started from the 1950s, but most of the contributions belong to the 1970s,. 1980s, and 1990s which again show that there has been a tremendous progress in this direction too during the last three decades. Indian scholars have shown keen interest in taking up various research projects mostly at the post-doctoral level, sponsored by research institutes/departments of the the governmental/non-governmental agencies in the country. Some significant details of these projects have been provided in Table 4. It is clear from the table that one and a half dozens of projects have been completed by the Indian scholars in this sub-field of geography.

In addition, some other significant projects - both the doctoral and the post-doctoral — have also been traced by the author. These projects have either been completed or are in progress. Some of them are as follows :

1. Ahmad, I., Geography of Transport and Market Centres in Western U.P., Aligarh University.

2. Aruna, C. K., Role of Agricultural Market Centres in Urban and Regional Development, Osmania University.

3. Banerjee, C., Variations in Insurance Credit Facilities in Rural Development in West Bengal with special reference to Siliguri Naxabari Area, North Bengal University.

4. Chauhan, K. S., Spatial Development of Market Centres in Bhagalpur District, Bhagalpur University.

5. Das, P. K., Market Centres and Rural Development in Orissa — A Geographical Analysis, Utkal University.

6. Geeta, T.A., Spatial Analysis of Periodic Markets in Dharampuri District, Madras University.

7. Gholag, T.N., Distribution of Livestock and Fodder Supply in Maharastra, Shivaji University.

8. Gupta, R.N.P., Spatial Development of Market Centres in Bhagalpur District, Bhagalpur University.

9. Jamkar, A.G., The Periodic Marketing System and Network in Dhule District, Nagpur University.

10. Jayaswal, B. L., Geo-Economic Development of Amravati District with Special Reference to Cotton Cultivation and Trade in Post-Independence Period, Nagpur University.

11. Kumar, B.S., Periodic Markets and Rural Development of Purnia Plain, Banaras Hindu University.

12. Mukhopadhyaya, T., Retail Commercial Structure of Greater Bombay, Bombay University.

13. Nayak, H.P. Syste and Network of Agricultural Market Places in U.P., Avadh University.

14. Padmini, D., Shopping Behaviour of Madras Metropolitan Area, Madras University.

15. Patil, B., Weekly Markets in Bijapur District.

16. Patil, M. N., Spatial Organization of Agricultural Markets in Marathawada — A Geographical Analysis, Shivaji University.

17. Rai, J.P., Impact of Rural Market Centres on Rural Development — A Case study of Lower Son-Basin, Gorakhpur University.

18. Reddy, S. N., Periodic Markets and Rural Development — A Case Study of Karimnagar District of Andhra Pradesh, Osmania University.

19. Sayed, Z. A., The Rural Tribal Market Area of Danga District, Baroda University.

20. Sengupta, S. K., Behaviour of Spatial Development in Land Value in Bangalore Metropolitan Area, North Bengal University.

21. Singh, A. L., Locational Analysis of Market Centres of Manipur — A Geographical study, Utkal University.

22. Srivastava, M. C. Market Centres and Rural Development in Southern Rajasthan, Vagad Region, Rural Development of Purnia Plain, Banaras Hindu University.

23. Thakure, B.D., Livestock Market Place Exchange System and Network in Nasik District (M.S.) — Case Study, Nagpur University.

24. Ukey, K. A., Cattle Marketing System and Network in Aurangabad District, Nagpur University.

25. Umamaheswari, P., Wholesale Function of Bombay and its Spatial Linkages, Bombay University.

26. Verma, S.R., A study of Weekly Market Centres of District Saharanpur, Meerut University.

27. Wankhedo, S. B., The Periodic Marketing System and Network in Aurangabad District, Nagpur University.

28. Yadav, H. R., The Pattern of Retail Locations in Towns of Saryupar Plain, Gorakhpur University.

29. Yadav, D.P., Marketing geographyMarketing Geography of the Urban Fringe of Varanasi, Gorakhpur University.

2.3.4 TEXT BOOK PROJECT AND TEXT BOOKS

It is a matter of great satisfaction and pride that a dozen Indian universities have introduced marketing geography as a special paper in the post-graduate programme. Hence, regular teaching in this area of geography has already started. This step has given a steep rise to the progress of studies on marketing geography as more and more students like to go-in-for M.Phil., and Ph. D. programmes in this branch

of geography. Some of the significant states of the country which have included marketing geography in some of their university syllabii are : Uttar Pradesh, Madhya Pradesh, Maharashtra, Rajasthan, and Karnataka. In view of this, it has become imperative to produce text books in this area of study. However, the author has located only two text books : *Geography of Marketing/Marketing Geography* (1984) revised and republished in 1990 by H. M. Saxena; and Vipanan Bhugol (1996) by V. K. Srivastava and R. S. Dixit. Thus, only one text book in English language by Saxena, and only one text book in Hindi language by Srivastava and Dixit have been produced. Credit goes to Academy, Bhopal, for the Hindi language text book by Srivastava and Dixit which is actually the outcome of a text-book-project sponsored by the Madhya Pradesh Hindi Granth Academy. Keeping in view that only one text book project and only two text books have been completed in marketing geography till now, there is an utmost need for production of such material in the country. And it is significant to mention that the introduction of the syllabus at the post-graduate level in the Indian universities will play a great role in the development of marketing geography in India during the coming years.

2.3.5 RESEARCH BOOKS

The production of research books in this sub-field has considerably added to the development of this area of study in the country. It is actually these books which provide major guidelines to the scholars for further work. It has been observed that on the basis of the themes discussed in these books, a number of scholars have started doctoral research in this area of study. It has also been observed that, primarily, these books themselves have developed out of doctoral dissertations and post-doctoral research project reports sponsored by various governmental and the non-governmental agencies. Some of such significant

Table 2.5 : Research Books

I. Chronological

DECADE	YEAR	AUTHOR	DECADE	YEAR	AUTHOR
1930s:	1937	Hussain, S.A.	1970s:	1979	Leon, S.
1950s:	1951	Kulkarni, K.R.	1980s:	1980	Sami, A.
	1953	Mitra, A.		1980	Wanmali, S.
	1956	Baranu, H. & Baneja, J.D.		1982	Ramachandra,
				1984	H. Dixit, R.S.
1960s:	1965	NCAER		1985	ICRISAT
	1965	Johnson, E.A.J.		1987	Srivastava, V.K.
	1968	Sinha, D.P.		1988	Dixit, R.S.
1970s:	1972	NCAER		1988	Srivastava, V. K.
	1975	Chaudhary, S.	1990s:	1990	Dixit, R.S.
	1975	Saxena, H.M.		1992	Dixit, R.S.
	1978	Pal, M.K.		1992	Saxena, H.M.
				1993	Jain, A.K.

II. Alphabetical

AUTHOR	YEAR		AUTHOR	YEAR	
Barnum, H. & Baneja, J. D.		1956	Mitra, A.	1953,	
			NCAER	1965,	1972
Chaudhary, S.		1975	Pal, M.K.	1978	
Dixit, R.S.	1984,	1988	Ramchandran, H.	1982	
	1990,	1992	Sami, A.	1980	
Hussain, S.A.		1937	Saxena, H.M.	1975,	1990
ICRISAT		1985	Sinha, D.P.	1968	
Jain, A.K.		1993	Srivastava, V.K.	1987,	1988
Johnson, E.A.J.		1965	Wanmali, S.	1980	
Kulkarni, K.R.		1951			
Leon, S.		1979			

works contributed by Indian scholars have been traced by the author (Table 2.5). The table clearly shows that with the passage of time, the number of research books is increasing fast. At least two dozens of such research books have been authored by the scholars in marketing geography. The table demonstrates clearly that during the last decade a good number of researchers considerably added to the literature on marketing geography by way of producing research books. Even the outcom of the present decade i.e, 1990s is quite encouraging as upto 1993 only four such books have been published. It has also been observed that marketing geography has been perceived from micro-level study to macro-level study in the country. The case studies of places/towns/markets (Sami, 1980; Dixit, 1992) have been taken up on the one hand, while country level works (Johnson, 1965; Dixit, 1990; NCAER, 1972; Wanmali, 1983) on the other. At the regional/state level also (Barnum, 1956; Dixit, 1984; Hussain, 1937; Jain, 1993; Leon, 1979; Saxena, 1990; Wanmali, 1980), a large numbers of works have been completed.

2.3.6 ACADEMIC MEETS

Academic discussions and sharing of views/opinions play a pivotal role in the development of knowledge. This is equally true to the development of marketing geography as well. With the establishment of the International Geographical Union Study Group on Geography of Commercial Activities in IGU Congress held in France (1984), seminars/symposia/workshops/conferences have started taking place in India also in the area of marketing geography. Although, a large numbers of academic meets have taken place till date, for want of time and space, only some significant ones especially held on marketing geography are taken up here for reference. Rather, in 1983 only, an All India Symposium on the Impact of Weekly Markets on Rural Societies was held in the Department of Geography, Madurai University in which

at least one and a half dozens of research papers were discussed in marketing geography. During the same year only, i.e., 1983, the International Workshop on agricultural markets in the semi-arid tropics was held at the International Crop Research Institute for the Semi-Arid Tropics, at Patancheru, Hyderabad, the papers of which have been published in 1985 under the title, *Agriculture Markets in the Semi-Arid Tropics*. This publication contains 38 papers under five sections : Agricultural market channels, Spatial organization of rural markets, Economic efficiency of agriculture markets, Equity aspects of Agricultural markets, and the Range of public Interventions.

An International Conference of the IGU Study Group on Geography of Commercial Activities was held in Gorakhpur in 1985, the papers of which have been published in 1988 under the title, Commercial Activities and Rural Development in South Asia. The publication contains as many as 45 research papers divided under four major themes : Current Status and Trends of Research in Commercial Geography, Analysis of Commercial Activities, Rural-Urban Linkages and Development, and Rural Development - Issues, Strategies, and Planning Policy.

A National Workshop on Regulation and Management of Agricultural Produce Markets was held in 1984 at Jaipur while an other National workshop on Agricultural Markets was held at Lucknow in 1985. However, in Lucknow almost every year, some sort of academic meet is organised generally in the month of August every year at the state level by the U.P. Mandi Parishad. The last in the series was the one held in August 1996.

During 1991, an International Conference was organized on 'IGU Commission on Commercial Activities in Gorakhpur in which various themes were discussed keeping in view the objectives of the newly formed Commission on Geography of Commercial Activities in IGU

Congress held in Sydney (1988). A National Seminar was held at Gorakhpur in 1993 in which several major themes were discussed such as : Spatial Organiszation of Commercial Activities; Ecological Perspectives of Commercial Activities and Environment; Commercial Activities and Development; Resource Utilisation and Development of Hills, Plateaus, and Mountains; and Ecological and Developmental Planning.

During March 1995, an International Conference on Commercial Activities and Regional Development - The Indian Ocean Region was organized by the International Geographical Union Commission on Geography of Commercial Activities at Delhi. In this conference, eight regions were included for discussion : Indian Ocean Proper, Arabian Sea Region, Bay of Bengal Region, Gulf Region, Antartica Region, South-China Sea Region, Ocean Islands, and the Pacific-Atlantic rim. The streams and sub-themes had been divided under five major heads : Theoretical and General, Spatial, Environmental, Ethical, and Technological.

During these academic meets more than 200 research papers under the broad spectrum of marketing geography were discussed. The significance of these meets can very well be understood in the development of this sub-field in the country.

Of late, with the coming up of the new study group, Globalization of Retailing, Chairman, Professor A. Metton has started publishing News Bulletins (January, 1997; January, 1998) which include various programmes of research for future. The News Bulletin, 1998, gives necessary information on various academic meets like International Symposium : The informal economy and development in the countries of the South Yacunde (Cameroon), Pre-Regional — Conference Workshop (Lisbon, Portugal); IGU International Workshop — Retailing

and Inequalities of Development (Gorakhpur, India); and the Impact of International Retailers on Local Communities (Toronto, Canada).

2.3.7 ACADEMIC ORGANIZATIONS

Academic organizations, too, play a great role in the development of knowledge. A few organizations have come up in the country in this area of study as well. These organizations make efforts in the direction of development of this sub-field by way of organizing academic meets, and publishing journals and other relevant material on the subject. In case of marketing geography, the following points are to be noted :

The Association of Marketing Geographers of India (Gorakhpur) came into being in 1981. It started publishing a research journal, Market Studies, from 1983. The first volume was released at the Fifth Indian Geography Congress at Aligarh (1983). Although, irregularly published, yet this academic body is making efforts to bring out its organ renamed as the Indian Journal of Marketing Geography. The Sixth Volume (1988) of this academic organisation has been released in 1996.

During 1982, a Commission on Geography of Marketing of the National Association of Geographers, India (NAGI) was established at the 4th Indian Geography Congress at Bombay University under the chairmanship of Prof. L. R. Singh (November, 1982). Since this year, the annual sessions of the Commission have been organised by the NAGI on the occasion of Indian Geography Congress every year.

The International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) Patancheru, Hyderabad in cooperation with the Geography Department of Osmania University, Hyderabad, and the International Geographical Union Working Group on Market Place Exchange Systems organized an International Workshop on Agricultural Markets in the Semi-Arid Tropics in October 1983. One of the recommendations of this workshop was :

In order to channelize adequately the Intellectual interest that has been generated in market studies by this workshop, it recommends that a 'Working Group in Market Studies' be set up in India with the object of providing a multi-disciplinary forum to pool together intellectual researches available in order (i) to accelerate research on marketing with a view to appreciating its complex problems and process, (ii) to bring together scholars of varied disciplines to present their research findings; and to emphasize the need of continuing market research as an aid to speeding up the process of economic development.

Thus, for the first time in India, at the International level, it was desired to give rise to an academic body or unit within the International Geographical Union in the sub-field of marketing geography to play the pivotal role in its progress.

During the early 1990s, the International Geographical Union Commission on Commercial Activities Chairperson gave rise to a club named, The First Fifty Founder Members Club. In this club, 50 members were admitted to extend their valuable views relating to the developmental activities of the IGU Commission on Commercial Activities in various countries. The author of the present work is also one of the first fifty founder members of the Club.

2.4 OVERVIEW AND CONCLUSION

The dimensions and the trends of progress of work in marketing geography in India considered in the aforesaid discussion yield the results shown in Table 2.6.

The statistics provided in the table make it crystal clear that during the various periods mentioned, the development of marketing geography during any decade, broadly speaking, from every standpoint, has been considerable in

Table 2.6 : Progress of Work —Dimensions and Trends

	Particulars	Before 1960s	1960s	1970s	1980s	1990s (till 1996)	Total
1.	Documentational Works - Papers and Book(s)	-	-	4	16	4	24
2.	Research Papers/ Short Papers	24	33	127	214	120	518
3.	(i) Research projects- Dissertations	2	5	14	15	9	45
	(ii) Research Projects-other than Dissertations	-	2	3	9	3	17
	3(i) + 3(ii)	(2)	(7)	(17)	(24)	(12)	(62)
4.	Text Book Project/Text Books	-	-	-	1	2	3
5.	Research books	4	3	5	8	4	24
6.	Academic Meets	-	-	-	5	3	8
7.	Academic Organizations	-	-	-	3	1	4
	Total	**30**	**43**	**153**	**271**	**146**	**643**

comparison to any previous decade(s). Here, it must be made clear that the decade, 1990s, is still in continuation, hence the numbers relating to various particulars of development have to be smaller for the 1990s. Thus, in case of production of documentational works, the progress during the 1980s has been considerably fast over the last decade (4 in 1970s + 16 in 1980s = 20). As regards research papers, the progress has been too fast (24 + 33 + 127 + 214 = 398) upto 1980s. With respect to research project reports, the increase has again been fast (2 + 7 + 17 + 24 = 50). Relating to text books project and text books, the work has only started from the 1980s. In connection with the production of research books, the increase has shown fast

development during the last three decades (3 + 5 + 8 = 16). In case of academic meets and organizations as well, the developmental work has only started from the 1980s. Taking all these aspects into consideration from before 1960s till the mid of 1990s, the development, thus, has been as 30 + 43 + 153 + 271 + 146 = 643. Thus, it is fairly fair to mention that the developmental work during the present decade would see highly favourable results after completion of the 1990s. In view of this, it would not be unfair to understand that a considerable amount of knowledge is going to be added to this field of geography during the present time only.

The geography scholars in the country have shown keen interest in carrying out researches on various perspectives of marketing geography in India. It is a good sign that the numbers of both the researchers and the researches have been considerably increasing during the past decades.

Besides, in several Indian universities, marketing geography has been included in the programme for the post-graduate courses as a special paper. In the various national and international conferences in India, research papers are specifically invited for discussion under the section/session scheduled for marketing Geography.

An organization (at the national/international level) named the 'Association of Marketing Geographers of India' has come into being. It brings out a research journal also entitled "The Indian Journal of Marketing geography".

To promote research work in this sub-field of geography, a commission, named, Geography of Marketing has come into existence. In addition, national/international conferences, symposia, seminars workshops on geography of marketing have also been held in the country during the recent past.

Thus, there are sound bases to understand that, by this time, in India, marketing geography has achieved the status of a branch of its parent discipline, Geography. Within the present frame-work, therefore, it is safely remarked that, basically, the formative stage has been achieved by Geography of Marketing in the country and with continued research work, its literature is being enriched constantly. Marketing geography, thus, is passing through the informative stage (after completing the formative stage), while the conformative and the reformative stages, a matter of constant multi-dimensional work and process, are, rather, still to come.

3. MARKET REGULATION AND REGULATED AGRICULTURAL MARKETS

3.1 OBJECTIVE

The objective of the present piece of research is to explain the background of Market Regulation Act, and the incoming of regulated agricultural markets — RAMs — in the state of Uttar Pradesh. While more precisely, the attempt aims at discussing the Indian panorama on the one hand; the panorama of U.P. comprising Market Regulation Act in U.P., the Mandi Parishad, the mandi committees and the various significant aspects related to RAMs of Uttar Pradesh such as growth and development perspectives like construction of new sites, village facilities, rural hats/periodic markets and godowns, roads and culverts, the commodity coverage, specific agricultural-produce-types, arrivals, and income are to be analysed on the other.

3.2 INDIAN PANORAMA

3.2.1 CONDITIONS OF MARKETING OF AGRICULTURAL PRODUCE PREVAILING BEFORE REGULATION

The entire process or chain related to the shift of the agricultural produce from its producer to its consumer (at a particular place, at a particular time, and at a particular price) is known as agricultural marketing. Thus, the agricultural marketing is the performance of all business functionaries involved in the flow of goods and services from the point of initial agricultural production i.e. farmer until they are in the hands of the ultimate consumer (Kohls, 1967, p. 9). This process is completed through the 'Agricultural Marketing System' in

which a long chain of intermediaries — the itinerant dealer, the village-trader, the wholesale trader, commission agents/ Arhatia — katcha/pucca—brokers, millmen, exporters — does exist.

The typical Indian agricultural marketing involves a farmer who cultivates small and fragmented holdings and hence he is at a disadvantage in marketing his produce as the volume of his produce is meagre. The spatial area where he sells his produce is also small due to the inadequate transportation facilities and for want of finances and warehousing facilities, he must sell his produce immediately after harvest and since there may be several farmers like him, the village trader offers only low prices for want of competition — thus the sale takes place at an unfavourable place, at unfavourable time, and on unfavourable terms. Thus, before the establishment of RAMs, the beginning of marketing itself used to be defective. There were no proper market places, no market yards and no proper storage facilities for farmers and even for traders too. Generally, all the business activities used to take place in the commission agent's premises. Also, there used to be a long chain of intermediaries. The various functions of the marketing process — the assembling, auction, weighing and payments were rather in disarrayed state and mostly favoured the side of the trader meaning thereby that the farmer was the loser. The biding was done only on the sample basis. The prices of the same crop used to vary from lot to lot. Some commodities were weighed while some were measured. There were no standard weights and measures. The weight and measures also varied from market to market and/or from trader to trader, also there used to be incorrect and false weights like weights made of sticks, stones, bits of old iron etc. As also, a seer, may range from 31 tolas to 102 tolas, a paseri may range from 5 to 9 seers, and a maund upto 64 seers as in parts of Bihar and Orissa. The competition used to be absolutely absent. Illogical and arbitrary

deductions were made both in cash and kind. The prices/rates used to be very poor. Handling charges also differed from trader to trader as also the charges were paid by farmers only in kind — in the form of grains only. There has been a complete absence of grading and standardisation. Deductions in considerable quantity used to be made from farmer's produce in the name of sample, arhat khurch, karda (impurities), dharmada (for charitable and religious institutes), goshala, (cattle-shed and water for animals) etc. The rates of commission charges of brokers (mediators) also varied from shop to shop or from person to person or from commodity to commodity or even the same commodity of different quality. The weighment was done by weighmen who were paid (Taulai) in kind by the farmer. Generally, these weighmen used to be the employees of traders/purchasers and hence they did all favours, directly or indirectly, to buyers only. In short, after sales of the produce the farmer had to pay sizeable amount of cash and/or kind. Thus, ultimately they did not get reasonable and due amount of cash against their agricultural sales. There were no credit facilities, no market intelligence service, no incentives to the farmers while the risk of marketing used to be very high for him.

Surprisingly, there also used to be a universal custom of 'coverbids', thereby keeping the seller in dark and placing him at the mercy of his arhatiya — the commission.

Under these circumstances the farmer was forced to sell his produce at the disadvantageous rate or price. The disputes, if any, were used to be settled by some influential purchasers/buyers who always did favour to trader only. The multiplicity of market fee like commission/brokerage, weighment, sample, palledari, pasang, dhalta, dharmada, goshala etc. were too common. The one time full payments were also not done by trader to farmer immediately after sales.

Thus, all the conventional mandies were dominated by traders only. Obviously, no one protected the farmers' interests. The entire process of marketing was heavily biased (i.e. in favour of traders).

3.2.2 MARKET REGULATION

There are two conditions for the development and strengthening the economy based on agriculture : constant rise in agricultural produce, and proper system for marketing the produce. Actually, to regulate the entire process of sale-purchase of agricultural produce in the market is 'market regulation'.

The word 'market' is derived from a latin word 'Marketus' which has come up from the verb 'mercart' meaning 'to trade'. Marketing means the act of buying and selling while a market is said to be regulated when a state government establishes it under specific enactment and frames rules and regulations to conduct marketing process in the market. The primary objective is to regulate the sale and purchase of the specified agricultural produce, create healthy conditions for fair competition as also ensuring a fair dealing between a producer-seller/farmer and a trader/purchaser. It provides various amenities to functionaries and ultimately helps in realising a better reward to the farmer. Transactions in a regulated market take under a set of rules and regulations and all the mal-practices are completely curbed through the novel device of government intervention.

Thus, under this system, the auction of various salable agricultural produce is done after proper cleaning and grading of the sale. The sale takes place only with the wishes of the produce-seller-farmer. The entire cost is paid to the farmer immediately and the produce is weighed through metric system and no traditional/rural (stone/old iron) weights are used under this regulation. All the traditional

deductions made in the name of dust, unwanted stuff, dharmada, goshala etc. are declared illegal. Thus, market regulation ensures the (I) loosening the undue and undesirable grip of traders, (ii) doing the justice with farmers by way of payment of proper cost of their produce to them as also the proper behaviour and treatment with them. Stern action in case of violation of these rules is taken and punishment is awarded to the erring persons. For effective implementation of market regulation, several facilities to all concerned are made available by the market committee in the market yard as also various plans are introduced for welfare and development of farmers. Actually, the regulation brings a balance amongst the producers, the traders, and ultimately the consumers by way of proper and reasonable policy and management.

Agricultural market regulation is the administrative action taken in various states of the country by their respective governments for proper wholesale marketing of the agricultural produce at particular markets.

In India, in 1877, the Commercial Economics and Statistic Department used to collect the information on marketing. The Karanjia Cotton Market was the first regulated market established as early as 1886 as per the Hyderabad Residency Order. The Berar Act 1897 (The Berar Cotton and Grain Market Law), The Indian Cotton Commodity Act 1917, The Bombay Cotton Act 1927 are some important steps in this connection. The Royal Commission on Agriculture was also appointed in 1927. In 1928, this commission made a recommendation that the detailed information related to marketing should be collected and kept safely. The Commission sharply criticised the prevalent functioning of agricultural marketing and recommended the establishment of regulated agricultural markets.

In 1930, the British Government for maintaining regular supplies to their industries in Great Britain, started interfering marketing in the conventional/traditional agricultural markets in the country. The Central Banking Inquiry Committee also endorsed the views of the Royal Commission in 1931. This gave rise to enact market legislation in various states for establishment of regulated agricultural markets. The Government of India also took several steps in this connection.

In 1935, every state of the country came to have Agricultural Marketing Department. The mentioned must' be made of some Acts like the Hyderabad Market Act 1933, the Central Province Market Act 1935, the Bombay Agricultural Act 1939, the Kerala Agricultural Produce Market Act 1939, the Punjab Agricultural Produce Market Act 1939, and the Mysore Agricultural Market Act 1941.

The Government established the Agricultural Marketing Advisor Office in 1935. The Central Agricultural Marketing Department prepared a model Bill in 1938. This office changed later into the Directorate of Marketing and Inspection. This Directorate took up the responsibilities of presenting various schemes for grading, standardisation, statutory regulation of markets, market research and surveys, the training of marketing personnels, and market extention programmes and so on.

Before the independence, about 124 markets were regulated but the development was not smooth and rapid due to the Second World War. After the freedom from the British rule, the work of regulation of agricultural markets was also speeded up. The Planning Commission also urged the various states of the Indian Union to speed up this task. Before the reorganisation (1955-56), of the states in the country, nine states/provinces passed the Market Regulation Act. At the time of reorganisation of states, there were a

total of 450 regulated agricultural markets. By the end of 1980, due to the efforts of the Government of India and various state governments, the market regulations enacted in 18 states and four union territories.

The process of agricultural marketing has been designed by Saxena (1992, p. 36) which is presented below after necessary moderation.

A. Non-Regulated Markets :

1. Producer —————————————————————————→ Consumer

2. Producer —————————→ Trader ————————————→ Consumer

3.
Producer ⟨ Agent —————————————↘
              Trader ——————————————→ Consumer

4. Producer → Government Agencies → Controlled/Cooperative Shops → Consumer

B : Regulated Markets

Producer ⟨ Wholesale Trader ↘
              Commission Agent → [Marketing According to Regulation] → Retailer ↘ / Cooperative Store ↗ → Consumer
              Government Agency ↗
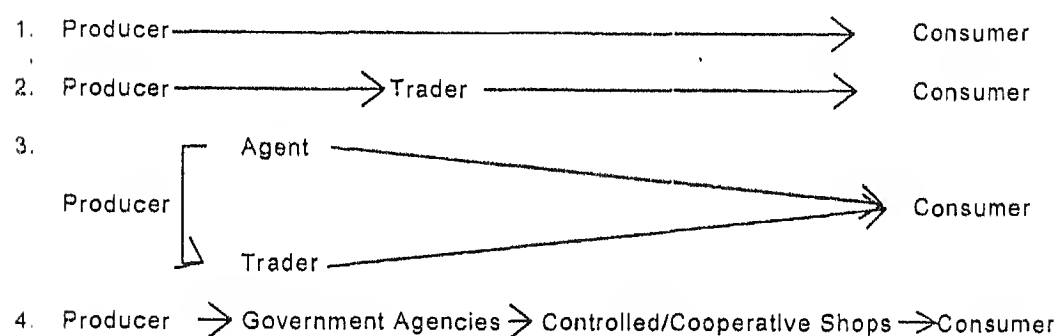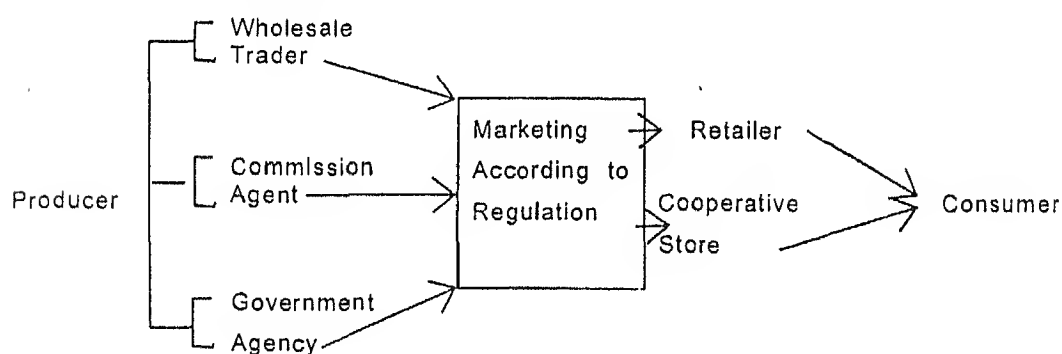
3.2.3 GROWTH OF REGULATED AGRICULTURAL MARKETS (RAMS)

The pre-independence period i.e. the ancient and medieval period, is not characterized by regulated marketing although the marketing and especially the barter system (Berry, 1968, p. 89) is as old as the ancient culture itself as the accidental surpluses were exchanged for other items. Saxena (1992, p. 25) has mentioned that the non-

existence of permanent markets during the ancient period in the state of Rajasthan was due to limited demand, harsh environmental conditions, (like desert, mountains, forest etc.), lack of transport facility, danger of dacoity and robbery, and economic backwardness in comparison to other Indian states.

During the medieval period i.e from the 17th century period till independence, the permanent markets, of course, came into being although these markets were not regularised under legislation like those at present. These markets worked as traditional ones. But the Britishers started some sort of control over various markets in different states of the country under various forms of legislation.

In the post-independence period, the regulation of traditional agricultural markets came into effect in different parts of the country from time to time.

Table 3.1 shows that there has been constant rise in the number of regulated agricultural markets in the country, more particularly from 1950s to 1980s.

Table 3.1 : Growth of Regulated Agricultural Markets in India

I. Chronological

Year	No.	Year	No.
1939-40	122	1963 - 64	997
1949-50	288	1964 - 65	1,086
1950 - 51	329	1966 - 67	1,707
1951-52	368	1967 - 68	1,806
1952 - 53	385	1968 - 69	1,881
1953 - 54	393	1969 - 70	1,957
1954 - 55	404	1970 - 71	2,118
1955 - 56	427	1975-76	3,331
1956 - 57	494	1979-80	4,445
1957 - 58	523	1980 - 81	4,456
1958 - 59	597	1984 - 85	5,604
1959 - 60	601	1985 - 86	5,695
1960 - 61	604	1986 - 87	5,774
1961 - 62	700	1987 - 88	5,942
		1988 - 89	6,052

Source : Directorate of Marketing and Inspection/NCAER, 1972, P. 52.

Table 3.1 : Growth of Regulated Agricultural Markets in India

I. Chronological

Year	No.	Year	No.
1939-40	122	1963 - 64	997
1949-50	288	1964 - 65	1,086
1950 - 51	329	1966 - 67	1,707
1951-52	368	1967 - 68	1,806
1952 - 53	385	1968 - 69	1,881
1953 - 54	393	1969 - 70	1,957
1954 - 55	404	1970 - 71	2,118
1955 - 56	427	1975-76	3,331
1956 - 57	494	1979-80	4,445
1957 - 58	523	1980 - 81	4,456
1958 - 59	597	1984 - 85	5,604
1959 - 60	601	1985 - 86	5,695
1960 - 61	604	1986 - 87	5,774
1961 - 62	700	1987 - 88	5,942
		1988 - 89	6,052

Source : Directorate of Marketing and Inspection/NCAER, 1972, P. 52.

II. State-wise

State/Union Territories	No. of Regulated Agricultural Markets		
	Main Yards	Sub-Yards	Total
Andhra Pradesh	233	335	568
Assam	13	19	32
Bihar	123	675	798
Goa	1	4	5
Gujarat	134	183	317
Haryana	96	157	253
Himachal Pradesh	8	36	44
Karnataka	116	244	360
Kerala	4	-	4
Madhya Pradesh	267	231	498
Maharastra	240	496	736
Manipur	-	-	-
Meghalaya	-	-	-
Orissa	42	87	129
Punjab	140	530	670
Rajasthan	138	241	379
Tamilnadu	272	-	272
Tripura	21	-	21
Uttar Pradesh	256	374	630
West Bengal	38	283	321
Chandigarh	1	2	3
Daman-Diu	-	-	-
Delhi	5	6	11
Pondicherry	1	-	1
Total	2149	3903	6052

Source : Mandi Vikas, Rajya Krishi Utpadan Mandi Parishad, April, 1989 (as on 31.3.1988).

The number of regulated agricultural markets, has increased approximately, by 10 times from 604 to 6052 especially during 1960-61 to 1988-89.

The statewise growth of regulated agricultural markets in India has been shown in Table 3.1.

Thus, there are more than 6,000 regulated agricultural markets in the country. Upto the First Five Year Plan period, there were only 255 regulated agricultural markets in the country. During the second, third, and fourth Five Year Plans, their numbers increased as 725, 1608, and 1880 respectively. Amongst the 6000 odd markets, 2000 odd are the main markets, while 4000 are the subsidiary markets. During the Seventh Five Year Plan (1985-90), Rs. 19.33 crores had been allotted for these markets (Mandi Darpan, 1995, p. 23).

3.3 PANORAMA OF UTTAR PRADESH

3.3.1 MARKET REGULATION IN UTTAR PRADESH

Under the 'Agricultural Produce — Classification and (Identifications) Act, 1937, the agricultural produce were classified and standardised. Since 1937 only, there has been a permanent post of an Assistant Marketing Officer, Lucknow in Uttar Pradesh. He took care of the functions related to agricultural marketing in the state. This state of affairs continued even after independence too. The marketing system was reorganised in June 1958 (i.e., during the second Five Year Plan) under the Agriculture Department of U.P., one post of State Agricultural Marketing Officer, U.P. was created. All the control and functioning of agricultural marketing has been under this officer only. This system was reorganised under the directions and guidance of Economic and Statistic Counsellor, Government of India, New Delhi. Under this scheme, the entire expenses were met by the Government of India and the Government of U.P. on the basis of 50 per cent each. For the collection of statistics of rates and arrivals of agricultural produce, regular staff

have been appointed (at all the important markets of U.P.,). At the divisional level, for supervison and control of functioning, Senior Agricultural Marketing Inspectors were appointed in Varanasi, Bareilly, Kanpur, and Hapur. Two gazetted posts of Assistant Marketing Officer, Hapur and Kanpur were created in June 1960 under this programme. During the third Five Year Plan, one Assistant Marketing Officer and one Assistant Agricultural Marketing Officer (Marketing Information and Research) posts were created at the state Headquarters, while in other divisions like Bareilly, Agra, and Varanasi, Agricultural Service Grade II posts were created.

A survey conducted for collecting marketing information especially related to rates showed that the producer-seller i.e. farmer does not get the appropriate value of his produce in the traditional markets. A market regulated through intervention of the government creates a situation of mutual trust and confidence between sellers and buyers — the farmers and the traders. Such a market also provides necessary facilities for both the buyers and sellers such as godowns, communication, transports etc. It acts as a powerful agent in bringing about a change needed primarily in the interest of farmers and secondarily of all concerned in trade and commerce. The Government of the Uttar Pradesh brought out an act known as 'Agricultural Produce Mandi Act' in the year 1964 and it was implemented in all the major traditional agricultural markets in the entire state of Uttar Pradesh. At present, this responsibility has gone to the 'Mandi Parishad'. Thus, the mal-practices, illegal deductions, and the undesirable impact of the mediators/ middlemen/brokers are checked and are being irradicated.

There is a great necessity of the analysis of the knowledge and activities of the agricultural marketing system. In accordance with the recommendations of the Agriculture Commission, 1976, a fully developed 'Agricultural Marketing Directorate' had been desired to be established in every state of the country. In the first part of *'Market Intelligence in India'*, it

has been clearly explained that the objective of the Agricultural Marketing Act is to regulate the sale-purchase of agricultural produce and to enable the farmer to get the best price of his produce. The market committees actually, are not capable to collect and despatch the trends of the sentiments and prices of market, and marketing behaviour to the government, hence, full time technical staff has been appointed for the collection of rates and arrivals, and market behaviour etc.

In Uttar Pradesh, an independent 'Directorate of Agricultural Marketing' has been established on 15th July, 1976. The objective of this body is to ensure the agricultural marketing research, marketing development and quality control on the one hand while the supervision, control of regulation in the process of sale-purchase of agricultural produce of the market on the other.

In the year, 1990, in favour of farmers, the Cold Storage Order was also issued while earlier to this in 1988, an integrated plan was prepared for the development of markets under which business of various types of agricultural produce is carried on in the primary rural markets and the subsidiary markets, and for this, the Central Government Assistance has also been extended by way of grant of considerable funds.

In view of giving benefit to larger section of the farmer community, the markets are regulated near the villages of the farmers. One market for one village was not feasable hence, a market is established for some villages to provide various facilties for the farmers.

For proper marketing there should be a set of rules and regulations compulsorily followed by all the market functionaries on the one hand while developing an institutional structure vested with authority so that all the functionaries follow all the directives.

The measure to regulate the markets in Uttar Pradesh has been designed with a view to achieve the following directions (UPRKUMA, 1964) :

(i) to reduce the multiple trade charges, levies and extractions charged from the producer-seller;

(ii) to provide for verification of accurate weights and scales and to see that the producer-seller is not denied his legitimate due;

(iii) to establish market committees in which the agricultural producer will have his due representation;

(iv) to ensure that the agricultural producer has his say in utilisation of market funds for the improvement of the market as a whole;

(v) to provide for fair settlement of disputes relating to the sale of agricultural produce;

(vi) to provide amenities to the producer-seller in the market;

(vii) to arrange for better storage facilities;

(viii) to stop unauthorised charges and levies from the producer-seller;

(ix) to make adequate arrangements for market intelligence with a view to posting the agricultural producer with latest position in respect of market dealings with his produce.

3.3.2 GROWTH OF REGULATED AGRICULTURAL MARKETS (RAMs) IN UTTAR PRADESH

To ensure the fulfilment of the objectives of the UPRKU Mandi Act, 1964, the work of establishment of regulated agricultural markets of Uttar Pradesh started from 1965-66. During this very year, there were only two such markets (mandis) in entire U.P. The number has gone 262 (January, 1996) and further to 263 (January, 1997), while the number of subsidiary markets is 381. The year-wise number of

main or primary regulated agricultural markets are shown in Table 3.2.

Table 3.2 : U.P. : Growth of Regulated Agricultural Markets —RAMs

Year	No. of Markets	Year	No. of Markets
1965-66	2	1980-81	252
1967-68	29	1984-85	255
1968-69	78	1987-88	256
1970-71	90	1988-89	258
1971-72	165	1989-96	262
1972-73	246	Jan. 1997	263

Source : UPRKUMP annual 1997 and other records.

The table makes it clear that during the last 30 years, the number of RAMs in U.P. has increased from 2 (1965-66) to 263 (1996-97). During the first five years, the number rose from 2 to 90 (1970-71) over a period of next ten years, it rose from 90 to 252 (1980-81) and over another 15 years it reached 262 (1995-96). At the beginning of the year 1997, it rose by one more i.e. to 263. Thus, there has been a tremendous growth in number of RAMs in U.P. particularly during the 1970-71 — 1980-81 period. It must be noted that while there were only 90 RAMs in U.P. during the year 1970-71, just the next year i.e. in 1971-72, there were as many as 165 RAMs in the state, meaning thereby that there has been an absolute increase of 75 RAMs. This makes it obvious that during this year, the government of the state took a great step to establish the RAMs in large numbers. From 1971-72 to 1980-81, also there has been a sharp increase in the number of RAMs by 87. However, during the 15 year period i.e., 1980-81 to 1995-96 the absolute increase was that of 10 RAMs only. The point in this connection is that in view of the government, more or less, the entire state had come under the Regulation Act. The RAMs of U.P., as on January 1, 1996, have been presented through Figure 1 and 2.

UTTAR PRADESH

REGULATED AGRICULTURAL MARKETS
1996

- ● REGULATED AGRICULTURAL MARKET
- ● DISTRICT HEADQUARTER
- ○ DISTRICT HEADQUARTER WITH REGULATED AGRICULTURAL MARKET

HIMACHAL PRADESH

CHINA
TIBET

MADHYA PRADESH

BIHAR

MADHYA PRADESH

KILOMETRE
100 50 0 100 200 300

Fig. 1

GROWTH OF REGULATED AGRICULTURAL MARKETS OF U.P.

Fig. 2
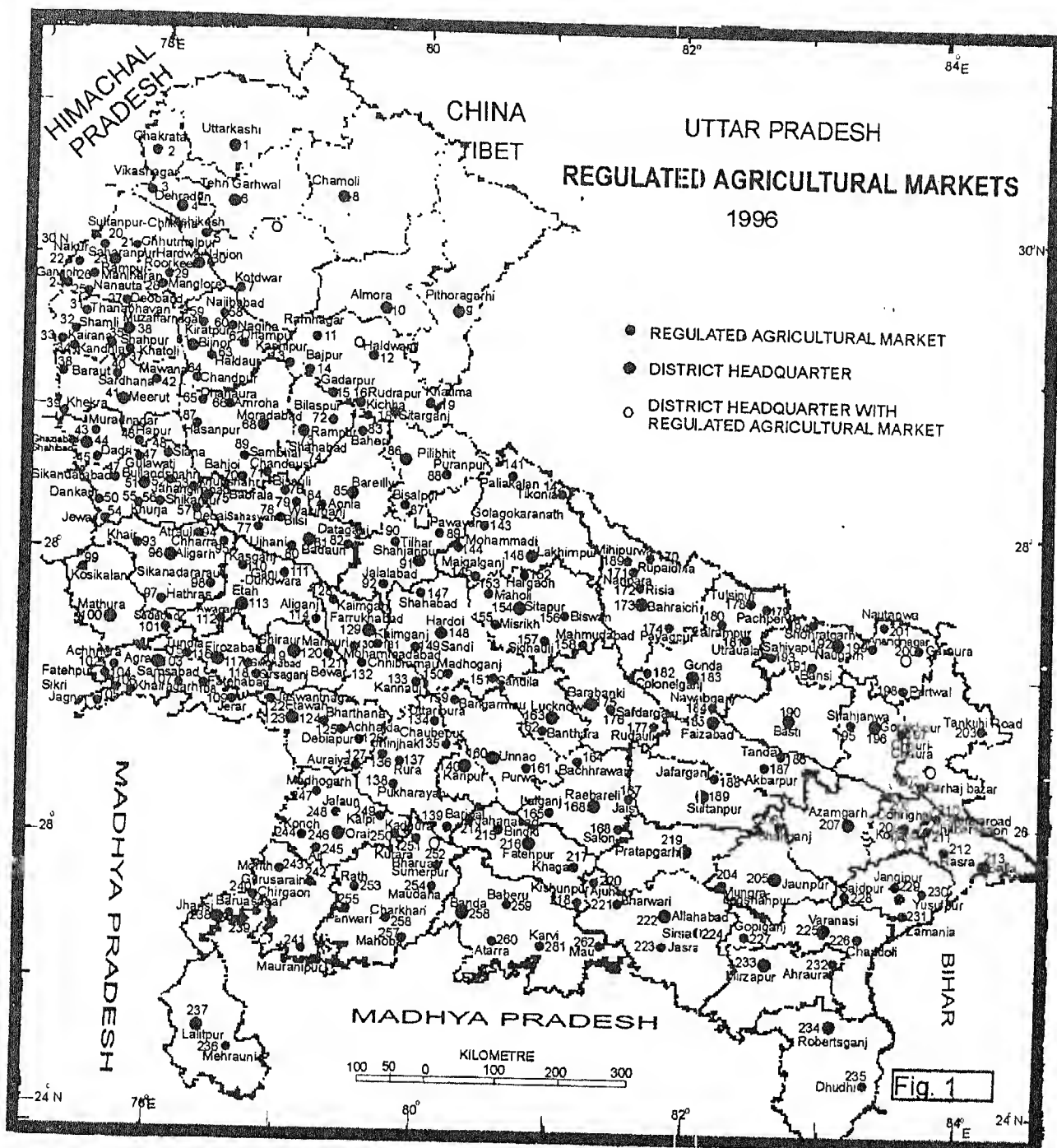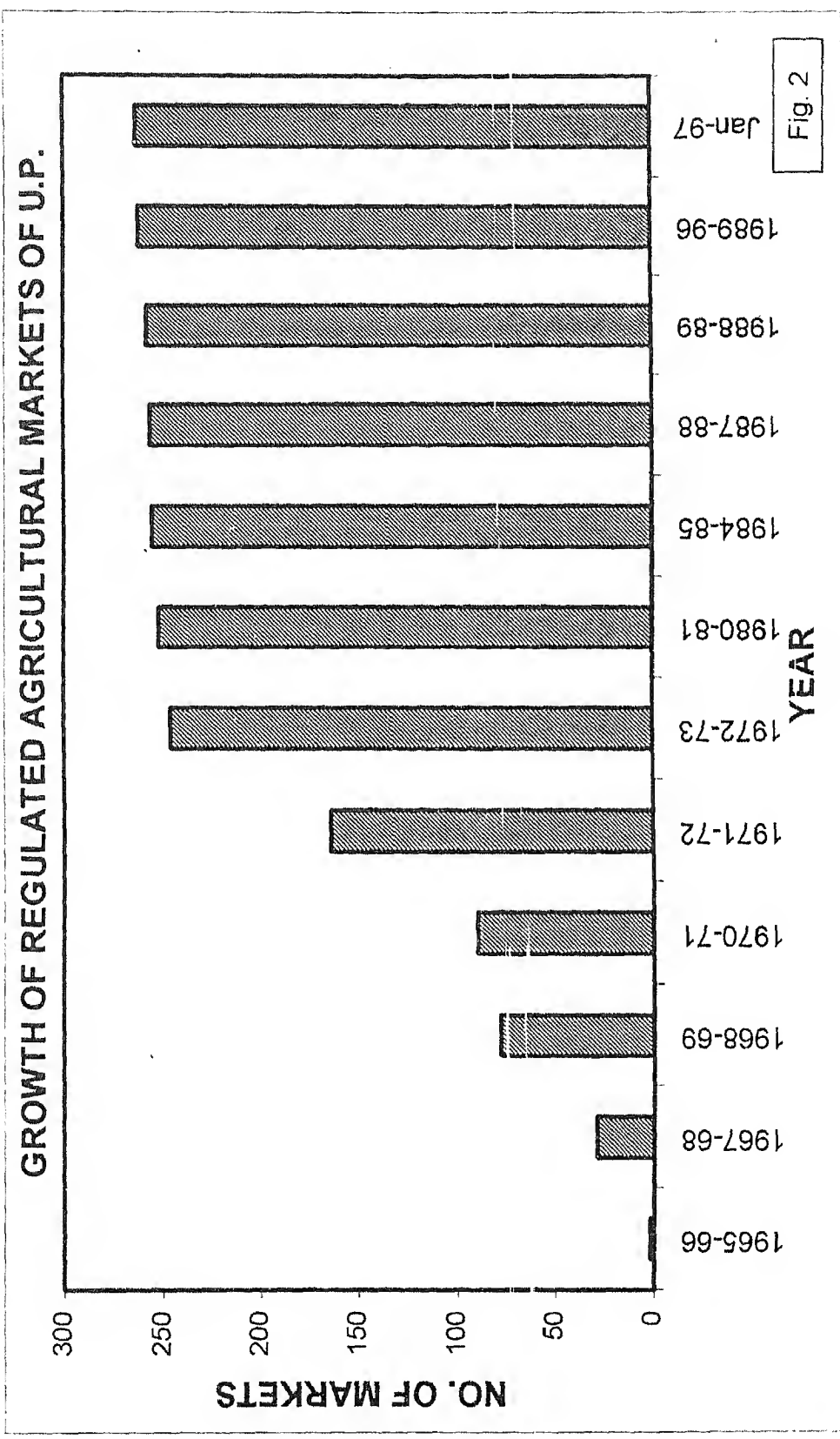
3.3.3 Mandi Samiti (Market Committee)

A notified market area includes a particular area with all of its villages for which a particular regulated agricultural market (Mandi) has been established by the Government and that that market is run by a particular Market Committee (Mandi Samiti). The market area is declared by the government notification to regulate the sale and purchase of the identified items of the agricultural produce, livestock etc.. The particular notified area is the jurisdictional limit of the particular market committee.

One market committee has been constituted for each market area as per the Mandi Act. The main responsibilities/duties of a market committee at its market are as follows :

(i) to ensure fair dealings between sellers and buyers — farmers and traders — of agricultural produce;

(ii) to grade/classify and standardise the saleable agricultural produce;

(iii) to sell the agricultural produce of the farmer (at his will) by auction;

(iv) to arrange correct weighing and measuring through metric system;

(v) to get the farmers received their full cost of the sold produce;

(vi) to collect and publicise the important information and market rates (in favour of sellers and purchasers) of agricultural produce;

(vii) to ensure proper arrangement of necessary facilities at the market place;

(viii) to provide solution to disputes between traders and farmers due to differences of opinions, and

(ix) to acquire the land for construction of mandi, to get prepared the layout for construction work for buildings, to maintain the statements of accounts of income and expenses, and to ensure the proper utilisation of all resources of the mandi.

The market committees are expected to be self-supporting bodies. The Act permits the market committee to charge market fee from the purchasers on the sale of commodities in the market, as also to collect license fee from the traders. Hence, both of these two are the primary sources of income of market committees. Besides, the other sources of income are : loans and grants, rent of buildings, interest on deposits, earnest money of the contractors of market committee premises-building construction etc.

The market fee is affected by (i) rate, (ii) volume of arrivals, (iii) number of commodities, (iv) marketable surplus (v) efficiency of staff collecting fees, (vi) trader's attitude, and (vii) license fees. Except the farmers, all other market functionaries are required to obtain license from the particular market committee at the time of its issue. It may vary from market to market. The main objective of this fee is to regulate the trade practices in the market and not to raise money hence, it is just nominal.

3.3.4 THE RAJYA KRISHI UTPADAN MANDI PARISHAD (THE STATE AGRICULTURAL PRODUCE BOARD)

During the year 1973, at the state level, to supervise the development plans, control and issue directions relating to the

functioning of market committee the 'Rajya Krishi Utpadan Mandi Parishad' — RKUMP — (The State Agricultural Produce Board) was established. Under the directions of Mandi Parishad, the Mandi Committees in the state have effectively implemented the provisions of the Mandi Adhiniyam (Act) and have played the pivotal role by helping the farmers to get the maximum costs from the sales of their agricultural produce through fair dealings in the mandis. This has resulted in constant increase in arrivals and income of Mandi Samitis. During the agricultural year, 1972-73, the total arrival of Mandis was 37.90 lakh metric tonnes which tremendously increased to 235.71 lakh metric tonnes during the agricultural year 1994-95. Likewise, the total annual income of mandis was Rs. 9.14 crore during 1972-73 which also rose to Rs. 150.3 crore during 1994-95. The existing structure of Mandi Parishad has been illustrated through Figure 3.

The following is the structure of Mandi Parishad as given in the original Mandi Act of the state : (i) Chairman appointed by the State Government; and Members — (ii) Commissioner, Agricultural Production, (iii) Secretary, Finance Department, (iv) Secretary, Food and Civil Supplies Department, (v) Secretary, Agricultural Department, (vi) Registerar, Cooperative Societies, (vii) Director of Agricultural (viii) Counsellor, Agricultural Marketing, Government of India (ix) Director, Fruit Utilisation and Technology (x) State Agricultural Marketing Officer (xi) One Vice-Chancellor of a state university, (xii) Either six members of Mandi Committees or (in case they are not available then three producers nominated by the state government, (xiii) Two members of Mandi Samitis representing the traders/agents, (xiv) Member Secretary —- Director, Mandi Parishad (Ex-officio).

UTTAR PRADESH : MANDI PARISHAD — STRUCTURAL ORGANISATION — A MODEL

Mandi Parishad

Chairman

Director

Additional Director Administration

Administrative Section

Joint Director (Admn.)
Deputy Director (Admn.)
Deputy Director (Land Acq.)
Administrative Officer

Marketing Section

Joint Director (Mar.)
Deputy Director (Mar.)
Deputy Director (W/M.)
Marketing Officer
Publicity Officer
Statistical Officer

Accounts & Audit Section

Finance Controller
Chief Accounts Officer
Senior Accounts Officer
Audit Accounts Officer

Building Section

Chief Engineer
Additional Chief Engineer
Joint Director (Buil.)
Joint Director (Elec./Mech.)
Deputy Director (D./Plng.)
Deputy Director (Elec./Mech.)
Assistant Engineer

Divisional / Regional Level

Divisional Deputy Director (Admn.)

All the 14 Divisions

Deputy Director (Buil)/ Engineering Cell

Civil

All the 14 Divisions

Electrical/ Mechanical

Lucknow	Bareilly	Allahabad	Ghaziabad

Fig. 3

3.3.5 NEW SITES OR YARDS

It has come to light that the Mandi Samits cannot effectively implement and fulfill the objectives of the Mandi Adhiniyam unless their new sites providing all the necessary infrastructural facilities are not constructed. Hence, under the directions of the Mandi Parishad, a promising plan has been prepared for construction of Mandi sites in the state so that the sparsely located wholesale establishments of agricultural produce may be brought together in one campus which is well-planned, safe, and convenient for all concerned. The figures for the construction of new sites of main mandis and sub-mandis during 1980-86 have been as follows :

1980-81 : 40 + 2 = 42; 1981-82 : 5 + 0 = 5; 1982-83 : 4 + 0 = 4; 1983-84 : 32 + 25 = 57; 1984-85 : 21 + 17 =38; upto December 1986 : 9 + 9 = 18; Total 111 + 53 = 164 (Pragati Deepika, 1984-85, p. 28).

The construction of new sites of main mandis during the last twelve years has been as : upto March, 1984 : 81; March, '85 : 101; March, '86 : 110; March '87 : 121; March '88 : 129 ; March '89 : 139; March '90 : 149; March '91 : 157; upto September '92 : 163; upto November '93: 167; upto February '94 : 171; upto August '94 : 172; August '95 : 175; November '95 : 177; March '96 : 178.

By March 1996, 178 main mandis, 70 sub-mandis, and 32 fruit-vegetable mandi sites had been fully constructed. All these sites are located in open areas, rather far-off the conjusted areas and narrow streets of their respective settlements. The details of the construction of mandis and the other sites have been shown in Table 3.3.

Table 3.3 : U.P. : Construction of Mandis

Division	Mandis			Fruit/Veg. Mandis			Sub- Mandis			Hat/Painths		
	A	B	C	A	B	C	A	B	C	A	B	C
Lucknow	19	2	2	4	1	-	-	-	-	26	-	-
Kanpur	15	3	1	-	-	-	12	-	-	2	1	-
Jhansi	22	1	-	-	-	-	8	1	1	11	-	-
Allahabad	7	-	2	1	-	-	6	-	-	13	1	-
Varanasi	8	-	-	1	-	1	5	-	-	2	-	-
Agra	18	1	1	3	-	1	7	2	1	10	-	-
Azamgarh	7	-	-	-	-	-	2	-	-	5	-	-
Gorakhpur	6	-	-	1	-	1	5	-	-	4	-	-
Garhwal	3	-	-	2	-	-	1	-	-	-	-	-
Bareilly	17	1	-	3	1	-	2	-	-	16	-	-
Kumaon	9	-	-	1	-	-	2	-	1	5	-	-
Meerut	22	8	6	7	-	-	6	-	-	4	-	-
Moradabad	13	1	1	7	-	-	6	-	1	31	-	-
Faizabad	9	-	1	2	-	-	1	-	-	16	-	-
Total	**178**	**16**	**14**	**32**	**2**	**3**	**70**	**3**	**4**	**146**	**2**	**-**

A = Constructed; B = Under- construction; C = Proposed for construction.

Source : Mandi Parishad, U.P. (collection from various Mandi Parishad records), 1996.

3.3.6 MODERN FACILITIES

Several modern facilities are provided at the planned new sites of the mandis. The modern facilities are playing a great role in the development of, especially, the farmers. Some of such facilities are : new mandi yards with separate gates of entrance and exits, boundary walls, broad metalled roads, office building, open and covered auction platforms, rest house, parking space, cattle-shed

and charhi, canteen, bank, post-office, telephone, telex, police-outposts, and toilets.

Besides, weighing units, potato-grader, electric facilities, drinking water, dispensary, public health centre, veterinary health centre, mechanically handled units for cleaning and grading, godowns and storages, traders' shops with storage, and shops for seeds, fertilizers, insecticides and fertilizers, medicines and agricultural implements or equipments are also available in the newly constructed yards.

Grading is an important process for an orderly marketing of any farm produce. The sale of any produce by inspection or just by observation is rather unscientific, time consuming, arbitrary, and far from present day development and trends. It shows only unefficient production and marketing. For improving the marketing of any agricultural produce, the grading or standardisation, hence, is an important and a positive step.

The following list shows the names of new mandi sites (Mandi Vikas, January, 1992, pp. 12-13) where various facilities are available:

Grading (G) and Cleaning and Auction (AC)

Meerut - G31 + CA31; Rohailkhand - G23 + CA8; Allahabad - G22 + CA 11; Varanasi - G8 + CA 6; Lucknow - G20 + CA7; Kumaon - G8 + CA8; Agra - G35 + CA23; Muradabad - G15 + CA14; Jhansi - G16 + CA 15; Gorakhpur - G3 + CA3; Faizabad - G12 + CA12 & 10; and Garhwal - G5 + CA5 (Figures denote the numbers of the particular facility in the territory).

Weighing

Aligarh, Bahjoi, Haldwani, Farrukhabad, Mainpuri, Hapur, Muzaffarnagar, Shamli, Saharanpur, Meerut, Agra, Bareilly, Shahjahanpur, Varanasi, and Allahabad.

Potato-grader

Dehradun, Jangipur, Ghaziabad, Bullandshahr, Muzaffarnagar, Varanasi, Budaun, Mathura, Hathras, Mohmmadabad, Aonla, Bisauli, Meerut, Haldwani, Moradabad, Bewar, Mainpuri, Rura, Sambhal, and Nazibabad.

Mechanical Handling Unit

Sitapur, Gonda, Lakhimpur, and Mathura.

Dispensary

Meerut, Muzaffarnagar, Shamli, Saharanpur, Mangalore, Mathura, Kanpur, Banda, Varanasi, and Baraut.

Veterinary Dispensary

Haldwani, Sitarganj, Bahjoi, Muzaffarnagar, Shamli, Saharanpur, Mangalore, Aligarh, Bahraich, Varanasi, Raebareli, and Baraut.

Telex

Ghaziabad, Bareilly, Aligarh, Dehradun, Moradabad, Muzaffarnagar, Allahabad, Meerut, Agra, Jhansi, Kanpur, Saharanpur, and Haldwani.

3.3.7 CONSTRUCTION OF OTHER SITES

The state government, besides the construction of main mandis has also constructed the fruit and vegetable mandis, sub-mandis as also

rural hats - painths. The details of number of mandis, fruit and vegetable mandis, sub-mandis, and rural hats/painths in terms of (A) constructed, (B) under construction, and (C) proposed for construction have been shown in Table 3.3.

I. Rural Hats

The rural markets generally helding once a week/twice a week are either under the ownership of Gram Sabhas or the private persons. The farmers bring the agricultural goods/produce to these hats and sell these goods in small lots (generally like oilseeds, fruits, vegetables etc.) . Such rural markets, generally, do not have facilities like sanitation, drinking water, and shade while the sellers have to pay fee for using the site in various forms. Hence, the Mandi Parishad has decided to make available the basic facilities for them without any payment. For this a five year plan has been prepared which has various steps and stages for development.

The office of the Agricultural Marketing Director has given the responsibility of studying such markets to the State Marketing Officer for multi-dimensional development of various markets keeping in view their location and significance. The master plan survey has been conducted under his direction, and the lists of a total of 3332 markets (including, 807 daily; 2506 perodic, and 19 seasonal hats) with their respectives ownerships and annual arrivals have also been prepared. Out of these hats, 262 hats have been declared as main regulated markets (mandies), while 381 have been declared as sub-yards (sub-mandies) by the government. Out of the 2697 rural markets, 1080 are held on the land owned by private persons and the rest 1617 are under the Gram Sabhas and Local Self Government Bodies.

II. Rural Godowns

A Market Committee can show better performance if the provision of storage facilities is available there in the market. The Government of India is encouraging the construction of godowns under the National Grid of Rural Godowns. Under this the 50 per cent of the cost of the godowns has been shared by the Central and State Government while the other 50 per cent is to be met by the funds of individual market committees.

While providing storage facility in the market is a significant perspective, the utilization of the facility is still more important. Generally, these facilities are not utilised by the farmers due to the high fee charged from them. Hence, the farmers pledge their produce under Government Pledge-Finance Scheme which provides short-term advances to deserving farmers who store their produce in the godowns.

On the coming of every new crop, the market rates for that particular crop, generally, come down. During such a time, with a purpose of protecting the farmers from forced sale of their produce; the rural godowns/storages have been constructed at mandi sites. At these storages, the farmers can keep their produce upto a period of 90 days as mortgaged against the payment of 75 per cent of the total cost of the day's rate for the crop. When there are better rates, the farmer can sale out his produce and can make payments to the Mandi Samiti. Under this scheme, 245 rural storages have been constructed till 1995 which have a total capacity of 1, 28,300 metric tonne-storage. It must be mentioned here that if a farmer prefers to keep his produce in the storage only for one month, no interest is charged from him, and after the sale of the produce, only 20 paise per bag rent and six per cent annual interest are charged. The advance loan amount has also been increased from Rs. 5000 to Rs.

20,000. This facility is known as Advance Loan Scheme. In the year 1994-95, the list of constructed and under-construction godowns in mandis of various districts is shown (Pragati Deepika, p. 22) as under :

Parikshatgarh (Meerut); Muradnagar (Ghaziabad); Jhabrera, Rampur Maniharan (Saharanpur); Kairana (Muzzafarnagar); Sasni, Aligarh, Sikandrarao, Hathras, Gabhona (Aligarh); Mathura (Mathura); Nidholi Kalan (Etah); Baheri (Bareilly); Pilibhit Bithoorakalan, Parwavesh (Pilibhit); Budaun (Budaun); Vasya, Nagina, Najibabad, Haldaur, Keerathpur (Bijnor); Jasra (Allahabad); Alipur, Amoli, Jahanabad (Fatehpur); Rura, Jhinjhak, Baipal, Ghatampur, Nauranga, Musanagar (Kanpur Dehat); Yakubpur, Hebra (Etawah); Mohammadabad (Farrukhabad); Karvi, Baweri (Banda); Kalpi (Jalaun); Chakia (Varanasi); Duddhi (Mirzapur), Yusufpur, Dildarnagar (Ghazipur); Belthara Road, Chitbaragaon (Ballia); Sonbarsa, Nautanwan (Gorakhpur); Talkulwa (Deoria); Mehmoodabad (Sitapur); Pali (Hardoi); Tikonia, Lakhimpur, Magalganj, Gola Gokarannath (Kheri); Sahia (Dehradun).

The names of mandies (with their respective districts) where Rural godowns which are under construction (Pragati Deepika, pp. 23-26) are shown as follows :

Shikarpur (Bullandshahr); Hapur (Ghaziabad); Jahangirabad (Bullandshahr); Sandhana (Meerut); Vikasnagar (Dehradun); Dalpatpur and Sambhol (Muradabad); Ramnagar (Nainital); Bisalpur (Pilibhit); Aonla (Bareilly); Talgram and Farrukhabad (Farrukhabad);

Auraiya (Etwah); Akbarpur (Kanpur); Kisanpur (Fatehpur); Dibai, Gulabari, Bullandshahr (Bullandshahr); Mangalore (Saharanpur); Nandpur (Bijnor); Chandausi and Kanth (Moradabad); Jallalabad (Shahjahanpur); Wazirganj and Bisauli (Budaun); Shamsabad

(Farrukhabad); Etawah (Etawah); Kanpur (Kanpur Nagar); Pukharayan (Kanpur Dehat); Fatehpur (Fatehpur); Allahabad and Jari (Allahabad); Chirgaon (Jhansi); Banda (Banda); Kabrai (Hamirpur); Jamapur and Dullapur (Ghazipur); Ballia (Ballia); Gopiganj (Varanasi); Gonda (Gonda); Sultanpur (Sultanpur); Bahraich (Bahraich); Kachaura (Aligarh); Kosikalan (Mathura); Khairagarh (Agra); Khair (Aligarh); Paliyakalan (Kheri); Jais and Lalganj (Raebareli); Amethi (Sultanpur); Phulpur (Allahabad); Mauranipur (Jhansi); Konch (Jalaun); Atarra (Banda); Sadat and Yusufpur (Ghazipur); Chitbaragaon and Belthararoad (Ballia); Mirzapur (Mirzapur); Jafarganj (Sultanpur); Faizabad (Faizabad); Pratapgarh (Pratapgarh); Mainpuri (Mainpuri); Agra (Agra); Shergarh (Mathura); Sitapur (Sitapur); Purwa (Unnao); Gorawal (Mirzapur).

III. Roads and Culverts

The Mandi Parishad gets constructed the roads/linkroads and bridges/culverts also so that the farmers can bring their produce in the mandis without any transport problem. By the end of October 1995, the following constructions were completed : Metalled Roads - 2429.74 km, Kharanja/Solan - 3985.14 km; and Bridges/Culverts number - 6740.

There was a target of construction of 500 km long roads during 1995-96 under which 355.05 km roads had been completed by December, 1995. As regards the general link roads, the construction stage upto March 1996 has been shown in Table 3.4.

Table 3.4 : U.P. : Link Roads Constructed by Mandi Parishad (upto March 1996)

	Constructed	Under Construction	Proposed for Construction
Length (km.)	6738.63	1497.58	1491.97
Cost (lakh Rs.)	20215.00	6739.11	7883.29
Benefited Villages (No.)	7183	1597	1565

Source : Jan Samanya Ko Samarpit Mandi Parishad Ka Uphar, (JSASMPKU) March 1996, p. 19.

3.3.8 COMMODITY COVERAGE

All the agricultural produce/commodities, which are produced by the farmers in the notified area for which there is an adequate market surplus are generally included in the notification of various market committees. The number of items or produce which have been specified by the Mandi Parishad for marketing in the Mandis of the state is 102 (Mandi Parishad, Annual Diary, 1996, pp. 43-44). All these items are classified under five broad classes : (a) farm produce (b) horticultural produce (c) Grape cultivation (d) Animal/Livestock produce, and (e) Forest produce.

Under the agricultural produce, there are seven sub-classs like (i) Cereals, (ii) Pulses, (iii) Oilseeds (iv) Fibrous crops (v) Inhailer (Tobacco) (vi) Spices, and (vii) Miscellaneous. The horticultural produce have two sub-sub-classes like (i) Vegetables, and (ii) Fruits. Under the third sub-class, grape agriculture is included. The Fourth category includes animal products like (i) Ghee (ii) Skin/Hides, and (iii) Fish. The last sub-class includes the forest

products like (i) Gond, (ii) Wood, (iii) Tendu leaf, (iv) Katha, and (v) Lac (Lakh).

As far as it is related to the first type of agricultural produce, each of the several sub-items (excepting, of course, tobacco — the fifth item) as also the second class of products, both the vegetables, and fruits have several sub-items under each. The further details are as follows :

A. Farm Produce

(i) Cereals

(a) wheat, (b) Barley, (c) Paddy, (d) Rice (e) Jowar, (f) Bajra (g) Maize, (h) Bejhar, (i) Jai.

(ii) Pulses

(a) Gram, (b) Barley, (c) Arhar, (d) Urd, (e) Moong, (f) Masoor, (g) Lobia seed (h) Soyabean (i) Sanai seed (j) Dhaincha seed (k) Gwar.

(iii) Oilseeds

(a) All types of mustard and Rye/Lahi (including Rye, Duan, Taramora and Torian), (b) Sehuan seed, (c) Alloi, (d) Andy, (e) Groundnut (f) Til, (g) Mahua-Guthli (h) Gullu (i) Barron and Kusum seed.

(iv) Fibers

(a) Jute, (b) Sanai fibre (c) Cotton (Ginned and non-ginned (d) Patsan (e) Dhaincha, (f) Rambans, (g) Mesuta

(v) Inhailer

(a) Tobacco

(vi) Spices

Dhania, (b) Chillies (c) Methi seed (d) Haldi (e) Khatai/Amchur

(vii) Miscellaneous

(a) Poshta (b) Mahua-flower (dried), (c) Gur, (d) Rab, (e) Sugar, (f) Khandsari, (g) Jagari (h) Makhana.

B. Horticultural Produce

(i) Vegetables

(a) Potato, (b) Onion, (c) Garlic, (d) Arvi, (e) Adarakh, (f) Chillies, (g) Tomato, (h) Gobhi - Band and Phool (i) Gajar, (j) Muli (k) Brinjal, (l) Tinda, (m) Lauki, (n) Green Peas, (o) Parwal, (p) Jock (Kuthal), (q) Kakri-khira, (r) Petha, (s) Bhindi, (t) Kaddoo.

(ii) Fruits

(a) Lemon, (b) Narangi, (c) Musammi, (d) Malta, (e) Grape fruit, (f) Banana, (g) Anar, (h) Kharbooja, (i) Tarbooj, (i) Papaya, (k) Apple, (l) Guava, (m) Ber, (n) Amla, (o) Lichi, (p) Cheeku, (q) Adu, (r) Lokat, (s) Mango, (t) Jackfruit - Ripe, (u) Khubani, (v) Pears and Nakh (w) Chakotra.

C. Grape Cultivation

(i) Grapes

D. Animal/Livestock Produce

(i) Ghee

(ii) Hides and skins

(iii) Fish

E. Forest Produce

(i)Gond

(ii) Wood

(iii) Tendu leaf

(iv) Kattha

(v) Lac (Lakh)

3.3.9 ARRIVAL OF CROPS

The volume of arrival in the regulated agricultural markets is, primarily, controlled by the marketable surplus of the notified items of the agricultural produce of the particular market area. The marketable surplus varies from time to time, commodity to commodity as the factors of the consumption volume and retention amount are important in this connection. Generally, the surplus is less in case of food crops as most of the volume of these crops is retained by the producer while that of commercial crop is more as less is retained and its large amount is meant for sale.

In accordance with the provisions of the Mandi Act, the Mandi Parishad, U.P. has provided necessary facilities to farmers for bringing their produce for sale at the main mandis and the sub-

mandis. The frequency of visits of farmers to a particular mandi is an interesting as also a significant aspect. In a way, it also throws light on the functioning of a particular market too on the one hand while farmers' attitude towards the working of a market on the other. The number of market visits by farmers have constantly been rising, consequently, the volume of arrival at the mandi as also the fee collected have been rising constantly. The following specified agricultural produce comprise 85 per cent of the total arrivals in U.P. : Wheat, paddy, arhar, gur, gram, potato, lahi, mustard, masoor, rice, khandsari, pea, urd, groundnut, moong, jowar, alsi, maize, bajra, barley, til, onion, wood, skin-hide, and banana. Table : 3.5 as well as Figure 4 demonstrate the mandi arrivals and income in the state.

Table 3.5 : U.P. : Mandi Arrivals and Income

Year	Total Arrival (Lakh metric tonnes)	Total Income (Lakh rupees)	Mandi Fee (Lakh rupees)
1972-73	35.15	192	-
1980-81	106.48	1867	1618
1981-82	118.19	2034	1732
1982-83	121.59	2167	1799
1983-84	126.84	3332	2176
1984-85	154.46	3073	2428
1985-86	171.35	3521	2826
1986-87	184.89	3886	3177
1987-88	181.53	4195	3363
1988-89	196.91	4599	3779
1989-90	222.55	5537	4454
1990-91	223.06	8912	7553
1991-92	213.79	11066	9504
1992-93	234.91	10365	
1993-94	238.09	11786	
1994-95	235.71	150.73	

Source : Pragati Deepika, p. 12; Mandi Vikas, January, 1992, p. 14-15 and other sources of Mandi Parishad.

3.3.10 INCOME

The main items of resources of income of a Mandi Committee are : Mandi fee from the purchasers at the rate of 2 per cent (plus development tax 0.5 per cent) of the purchase value of the specified

U.P. : MANDI ARRIVALS AND INCOME

Fig. 4
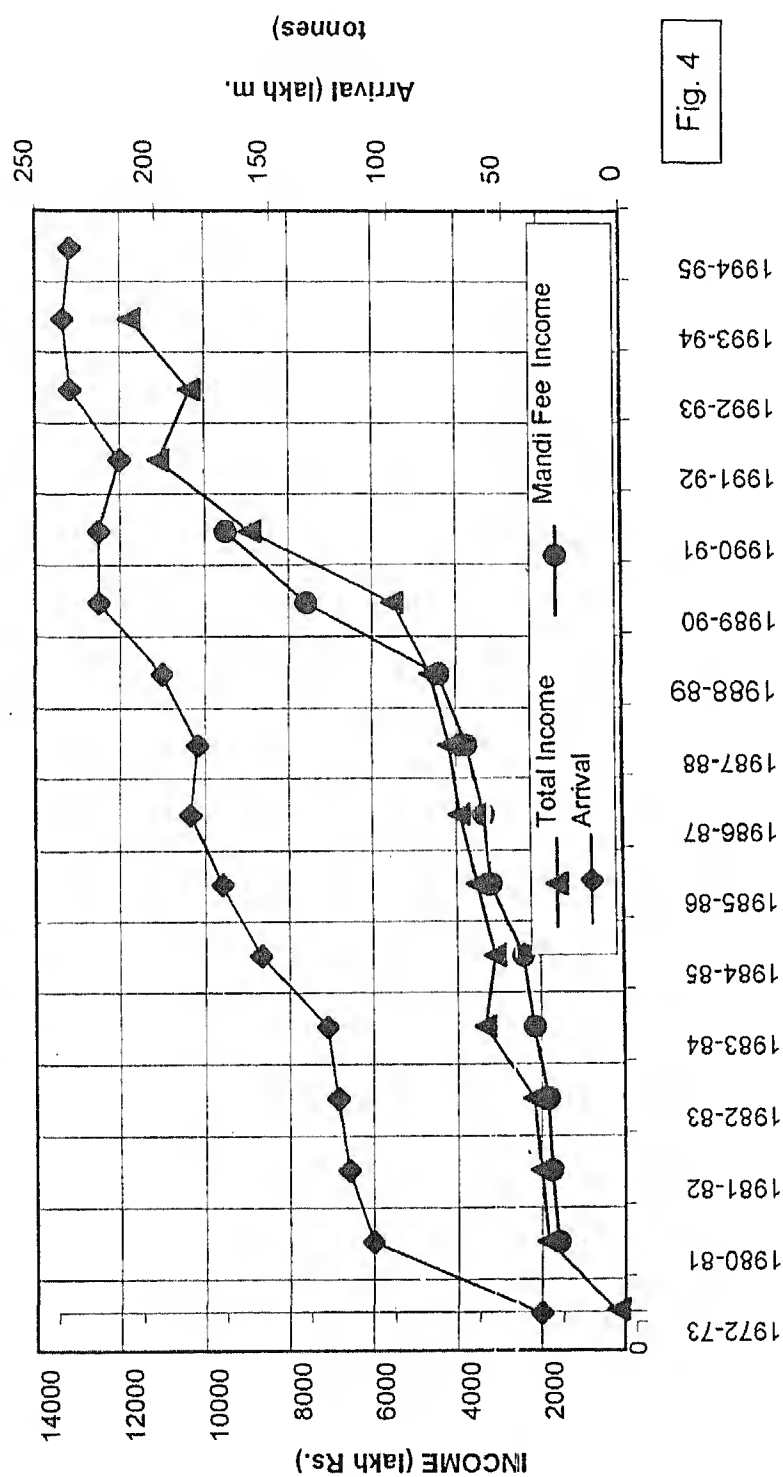
agricultural produce brought for sale, rent of shops and other buildings, and the interests of deposits with bank and post-office. About 85 per cent of the total income of Mandis come from these items only.

Under the supervision of the mandis, the farmers are being attracted continously for sale of their produce in the mandis due to the availablity of various necessary modern facilities and services at these sites.

It must be mentioned that during 1991-92, from July to December — a period of six months only — the mandi fee and the total income was considerably enhanced by 15.38 crores rupees and 16.68 crores rupees in comparison to same six month-period of the same earlier/year and that this was the record increase in the mandi fee and total income in the entire history of Mandi Parishad. Table 3.6 illustrates the details of the number of mandis and through the mandi fee received by the government during the year 1990-91, 1991-1992.

Table 3.6 : U.P. : Income from Mandi Fee

Income from Mandi Fee	No. of Mandis	
Mandis with Annual Income	1990-91	1991-92
1. More than 2 crore Rs.	3	4
2. 1-2 crore Rs.	11	17
3. 50 lakh - 1 crore Rs.	25	29
4. 25 - 50 lakh Rs.	45	57
5. 15 - 25 lakh Rs.	60	57
6. 5 - 15 lakh Rs.	88	78
7. Less than 5 lakhs Rs.	30	20
Total	262	262

Source : Mandi Vikas, October, 1992.

3.3.11 MARKET INTELLIGENCE SURVEY, AND RESEARCH

Another important function of a Mandi Committee is the dissemination of market information in the interest of farmers in the market(s) and the respective notified area(s). The various market committees display prices on the notice-boards and announce them on the mike when the bidding is in progress.

It is also to mention that the market committees take initiative to conduct studies about the cost of cultivation, marketable surplus etc. Generally, it has been observed that the Market Committees do not do much of this work. The Agriculture Department itself has taken several steps in this connection such as bringing out publication of prices, announcement of prices by AIR as well as in the local dailies.

3.3.12 OTHER STEPS FOR DEVELOPMENT

Several other steps in the interests of the farmers for their development have also been taken up by the Mandi Parishad of Uttar Pradesh such as construction of grain mandi, fruit/vegetable mandi, sub-mandi, hat-painth, general link road, Gandhi gram link road, Ambedkar link road, Indira link road; and installation of hand-pump (India mark 2).

The U.P. Rajya Krishi Utpadan Mandi Parishad (RKUMP) has been honoured by 'Kosamb' Award of the Government of India only because of the good administrative management and conduct of various welfare programmes for farmers through the income generated by its own resources. In view of income and development perspectives, the UPRKUMP is on the top of all the agricultural boards of the country.

The detailed data relating to the work constructed, under-construction, proposals for construction and both in case of number of works, and cost in rupees have been published by Mandi Parishad (JSKSMPKU, March, 1996, p.1).

SECTION B

SPATIAL ANALYSIS OF
REGULATED AGRICULTURAL MARKETS
OF U.P.

4. DISTRIBUTION

4.1 OBJECTIVE

The distributional perspectives are amongst the most significant ones which provide foundation for geographic study of any physical/cultural element(s). Distribution over space is the phenomenon which is spatial in nature. Harvey, (1969, p. 191) has also opined that, essentially, Geography is concerned with distribution in space. Since the (spatial) distribution aspect is simply of geography, very much of geography and too much of geography, the major hypotheses have been outlined relating to this aspect only. Hence, the study of distribution of the regulated agricultural markets — RAMs — of U. P. is the basic objective of the present endeavour. Especially, the attempt aims at analyzing the theoretical patterns of RAMs over the space of U.P. in terms of area, population, and inhabited villages on the one hand, while the spatial distribution patterns of RAMs on the other has equally been treated under this as this aspect is related to locational analysis. In addition, it has also been tried to find out the factors responsible for affecting the distribution of RAMs in U.P. No study of these markets of U.P. has yet been done in terms mentioned above, hence, the present research is presented.

4.2 AVAILABLE STUDIES

As has already been mentioned, the distributional aspect is one of the most significant aspects of geographical studies, large numbers of cases have been taken up on market-distribution by several scholars in the country. But, the point to be noted is that the distribution of conventional/traditional agricultural markets, and that of periodic markets have been attended to instead of the regulated agricultural

markets. However, a few studies related to present context must be mentioned. Ram (1980, p. 60-69), and Nayak (1982, p. 38-44) have made attempts to discuss these markets of lower Ganga-Ghagra Doab, and Saryupar Plain respectively.

Dixit (1988, p. 69) has touched the aspect with reference to Hamirpur District. Dixit (1990, p. 57) has given a short list of reference work on regulated agricultural markets along with the urban and daily markets. Hugar (1992) has briefly analysed the locational character of such markets of Gulbarga District of Karnataka. Saxena (1992, pp. 42-64) has presented spatial pattern and locational analysis of such markets of Rajasthan briefly including the patterns, and density of these markets. Dixit, A. (1996, pp. 69-97), of course, has made an attempt to discuss the theoretical distribution of RAMs of U.P., but the analysis is too general as the basic study unit taken for the analysis is the administrative division and no analysis is yet available for U.P. at the district level.

4.3 METHODOLOGY

The spatial distributional perspectives of RAMs of U.P. have been analysed through different approaches in the present work. The numbers of the distribution of RAMs at the district level have been tested through a statistical technique, the X^2 (Chi-square), involving a null hypothesis to find whether there is a significant difference between the numbers of RAMs in various districts. The theoretical distribution of RAMs has been analysed, especially, in terms of area, population, and the number of inhabited villages of various districts. The distribution variation at the district level has been measured through standard deviation (σ) against the mean for the state. Various classes $\overline{X}$ through $\overline{X}$, $\overline{X} + 1\sigma$, $\overline{X} + 2\sigma$, ... $\overline{X} - 3\sigma$ have been created The locational pattern of RAMs has been examined through the Nearest Neighbour Analysis and it has been tried to locate the various RAM-

districts under various locational distribution patterns such as clustered, random, and regular. As far as it is related to the unfolding of the effects of various elements, especially, the area, population, village-number, road-length, and market surplus of the districts on the distribution of the RAMs in the state, exhaustive statistical exercises relating to co-efficient of correlation have been done to test various hypotheses. Besides, the distribution perspectives have also been explained with the help of the basic tools of geography — the maps and diagrams. The distribution maps on theoretical measures and scatter diagrams on the factors affecting the distribution of RAMs in U.P. have been employed for the purpose.

4.4 DISTRIBUTION

4.4.1 GENERAL DISTRIBUTION

There are 262 RAMs in the state over 63 districts. In general term, some districts are of as low number as one while one district, Bullandshahr, has as high as eleven RAMs. Figure 1 demonstrates the RAMs of U.P. in various districts. The present analysis has two parts : Numerical distribution of RAMs in the districts and, Statistical testing of difference in the number of RAMs in the districts.

I. Numerical Distribution

The details of the districts which have RAMs ranging from 1 to 9 each are presented serially as follows :

The one RAM each districts include all the districts of Garhwal division excepting of course, Dehradun, two districts of Kumaon division i.e. Pithoragarh, and Almora, and the districts of Kanpur Nagar, Basti, Azamgarh, and Pratapgarh — in all ten in number. Thus, the first six districts are located in the U.P. hill region, while the rest four are

located in plain region — Kanpur in the central, while other three in the eastern part of the state.

Seven districts of the state namely, i.e. Lucknow, Sultanpur, Deoria, Mau, Mirzapur, Sonbhadra, and Lalitpur — located in the plain region excepting the last three (which are located in southern U.P.) — have two RAMs each.

As high as twelve districts have three each such markets. These districts are Hardwar, Rampur, Bareilly, Pilibhit, Mathura, Mainpuri, Unnao, Barabanki, Faizabad, Gorakhpur, Jaunpur, and Varanasi. Out of these, the first six districts are located in the western plain region; Unnao in the central region; while the rest five are located in the eastern plain region of the state.

There are eight districts having four RAMs each. Of these are : Dehradun, Ghaziabad, Shahjahanpur, Ferozabad, Siddharthnagar, Maharajganj, Ballia, and Ghazipur. Only Dehradun district belongs to the hill region while all the rest are located in the plain region. The last four are in the eastern part while the other three are located in the western part of U.P.

Five-market districts are seven in number : Meerut, Etah, Hardoi, Raebareli, Fatehpur, Allahabad, and Banda. Out of these, the first two are in the western plain region; the second two are in the central U.P. region; the next two in the eastern U.P. while the last one is located in the Bundelkhand region.

Six-market districts include Aligarh, Etawah, Farrukhabad, Kanpur Dehat, Kheri, Bahraich, and Jhansi. Aligarh is located in the western part; Etawah, Farrukhabad, Kanpur Dehat, and Kheri in the central U.P.; Bahraich in the eastern U.P. and Jhansi belongs to the Bundelkhand area.

Seven districts have seven markets each : Muzaffarnagar, Bijnor, Moradabad, Sitapur, Gonda, Jalaun, and Hamirpur.Out of these, the first three belong to the western U.P. area ; Sitapur to the central U.P.; Gonda to the eastern U.P. while the last two districts are located in the Bundelkhand area of the state.

Eight-market districts are small in number — only three : Shahjahanpur, Budaun, and Agra — all belonging to the western region of the state.

However, there is just one district, Nainital having nine regulated agricultural markets.

In the entire state there is only one district, Bullandshahr having 11 RAMs, one has 9 RAMs, three have 8, seven have 7, seven have 6, seven have 5, seven have 2, eight have 4, ten have 1 each, and 12 have 3 each such markets.

The average number of RAMs per district comes to 4.15. Thus, there are 37 district which have less than 4.15 RAMs each as against 26 districts which have more than 4.15 RAMs each. There are 92 RAMs which are located in above mentioned 37 districts while 150 RAMs are located in the other 26 districts.

As far as it is related to the ranking of the districts on the basis of number of RAMs, there exist 10 ranks the details of which are given in Table 4.1.

Table 4.1 : U.P. Ranks of Districts with RAM - Numbers

Rank	No. of Regulated Agricultural Markets in the District	No. of Districts	Percentage of Districts
1.	Eleven-market-district	1	1.6
2.	Nine-market-district	1	1.6
3.	Eight-market-districts	3	4.8
4.	Seven-market-districts	7	11.1
5.	Six-market-districts	7	11.1
6.	Five-market-districts	7	11.1
7.	Four-market-districts	8	12.8
8.	Three-market-districts	12	19.0
9.	Two-market-districts	7	11.1
10.	Single-market-districts	10	15.8
	Total	**63**	**100**

However, there are 7 district headquarters in the state which do not have main regulated agricultural markets. These district headquarters are Pauri Garhwal, Nainital, Maharajganj, Deoria, Mau, Gnazipur, and Hamirpur. Of these, the first two are located in the hills. Next four in the eastern U.P. and the last one is located in the Bundellkhand region. Thus, 56 district headquarters in the state have got the main RAMs.

II. Statistical Testing of Numerical Distribution

After explaining the general distribution of RAMs in the 63 Districts of U.P., it seems proper to analyse statistically the difference in the number of RAMs in various districts of the state. Thus, it aims at answering the question : Is there any significant difference between the number of RAMs in the various districts of U.P. ?

To solve this problem, the null hypothesis that there is no significant difference between the number of RAMs of various districts of U.P. has been tested.

The numerical distribution of markets in various districts of U.P. at a glance, shows that although the number vary from 1 to 11 markets, there are 29 districts which have markets from 1 to 3; the 44 districts have varying number of markets from 1 to 5 ; there are as many as 58 districts with variation from 1 to 7 RAMs each. However, there are only three districts where there are 8 markets each. While just one district only with nine markets and similarly just one other with 11 markets. Therefore, in case, the variation is considered from 1 to 11 than there seems to be a significant difference. At this moment, it seems proper to statistically test the phenomenon to provide the absolutely correct picture. Dixit (1988, pp. 88-89) has made an attempt to examine such a hypothesis in case of market centres of Hamirpur District of U.P. In the present case, the details are given below :

The Null Hypothesis

There is no significant difference between the true frequency i.e. O, and the expected frequencies i.e., E, in the entire population, i.e., series of number of regulated agricultural markets in various 63 districts of U.P.

Test Technique	: χ^2
H_o	: $f\chi_o = f\chi_e$
H_a	: $f\chi_o \neq f\chi_e$
Test Statistic	: χ^2, df = k - 1 = 62
Significance	: P = 0.01, 0.02, 0.05, 0.10

Decision Rule : Reject H_0 if χ^2 is

> 92.00 at 0.01 level

> 88.12 at 0.02 level

> 82.52 at 0.05 level

> 12.20 at 0.10 level

The symbol $f\chi$ simply indicates the frequency of variable X in this case of 63 classes (districts). The numbers of RAMs vary from 1 to 11 in these 63 districts. The mean has been calculated as $\overline{X}$ = 4.15. The detailed results of the calculations are given in Table 4.2

The value of χ^2 (i.e. 83.96) is not more than 92.00 as well as 88.13 meaning thereby that at the levels of 0.01 and 0.02 the Hypothesis set for rejection, stands unrejected indicating that the difference between the number of RAMs in various districts of U.P. is not by rule but by chance.

However, at the levels of 0.05 and 0.10, the χ^2 value is above 82.52 as also 12.20 demonstrating that at these levels, the Hypothesis set for rejection, is rejected and, hence, the H_a is accepted.

Table 4.2 : U.P. : Distribution of RAMs — χ^2 Statistics

1	2	3	4	5	1	2	3	4	5
1	14	6.85	46.92	11.31	33	51	-0.15	0.02	0.01
2	8	4.85	23.52	5.67	34	56	-0.15	0.02	0.01
3	9	3.85	14.82	3.57	35	10	-1.15	1.32	0.32
4	18	3.85	14.82	3.57	36	17	-1.15	1.32	0.32
5	24	3.85	14.82	3.57	37	19	-1.15	1.32	0.32
6	11	2.85	8.12	1.96	38	20	-1.15	1.32	0.32
7	15	2.85	8.12	1.96	39	23	-1.15	1.32	0.32
8	16	2.85	8.12	1.96	40	27	-1.15	1.32	0.32
9	34	2.85	8.12	1.96	41	35	-1.15	1.32	0.32
10	40	2.85	8.12	1.96	42	39	-1.15	1.32	0.32
11	61	2.85	8.12	1.96	43	41	-1.15	1.32	0.32
12	62	2.85	8.12	1.96	44	45	-1.15	1.32	0.32
13	22	1.85	3.42	0.82	45	48	-1.15	1.32	0.32
14	28	1.85	3.42	0.82	46	55	-1.15	1.32	0.32
15	29	1.85	3.42	0.82	47	36	-2.15	4.62	1.11
16	30	1.85	3.42	0.82	48	42	-2.15	4.62	1.11
17	32	1.85	3.42	0.82	49	47	-2.15	4.62	1.11
18	38	1.85	3.42	0.82	50	50	-2.15	4.62	1.11
19	60	1.85	3.42	0.82	51	57	-2.15	4.62	1.11
20	12	0.85	0.72	0.17	52	58	-2.15	4.62	1.11
21	25	0.85	0.72	0.17	53	59	-2.15	4.62	1.11
22	33	0.85	0.72	0.17	54	1	-3.15	9.92	2.39
23	37	0.85	0.72	0.17	55	3	-3.15	9.92	2.39
24	52	0.85	0.72	0.17	56	4	-3.15	9.92	2.39
25	54	0.85	0.72	0.17	57	5	-3.15	9.92	2.39
26	53	0.85	0.72	0.17	58	6	-3.15	9.92	2.39
27	2	-0.15	0.02	0.01	59	7	-3.15	9.92	2.39
28	13	-0.15	0.02	0.01	60	31	-3.15	9.92	2.39
29	21	-0.15	0.02	0.01	61	43	-3.15	9.92	2.39
30	26	-0.15	0.02	0.01	62	49	-3.15	9.92	2.39
31	44	-0.15	0.02	0.01	63	53	-3.15	9.92	2.39
32	46	-0.15	0.02	0.01					

0.01 = 92.009; 0.02 = 88.13; 0.05 = 82.52; 0.1 = 12.20

Note :
1 = Serial number of District is as per Appendix 2; 2 = (O) = No. of RAMs;
3 = (O − E); 4 = $(O - E)^2$; 5. $(O - E^2 / E)$

4.4.2 THEORETICAL DISTRIBUTION

Theoretical distribution of the RAMs of the state has been explained statistically. This entire exercise has been done from four angles : General distribution of markets in the districts; distribution of markets in terms of district area; distribution of markets in terms of district population; and the distribution of markets in terms of inhabited villages of various districts of U.P. The mean of the series of districts - markets as also the standard deviation (σ) of the same have been calculated in each case. The details of these are given in Table 4.3. The distribution has been analysed through the statistical classes like $\overline{X}$, $\overline{X}$ + 1σ, $\overline{X}$+2σ, ..., and $\overline{X}$ - 3σ.

Table 4.3 : U.P. : Distribution of RAMs - Theoretical

District Sl. No.	Statistical Values of RAMs			District Sl. No.	Statistical Values of RAMs		
	Per 100 km² Area $\bar{X} = 0.09$ $\sigma = 0.05$	Per 10,000 Pop. $\bar{X} = 0.02$ $\sigma = 0.01$	Per 100 Inha. Villages $\bar{X} = 0.29$ $\sigma = 0.23$		Per 100 km² Area $\bar{X} = 0.09$ $\sigma = 0.05$	Per 10,000 Pop. $\bar{X} = 0.02$ $\sigma = 0.01$	Per 100 Inha. Villages $\bar{X} = 0.29$ $\sigma = 0.23$
1.	.01	.04	.15	33.	.08	.02	.27
2.	.13	.04	.54	34.	.12	.03	.30
3.	.02	.02	.05	35.	.07	.01	.18
4.	.02	.02	.03	36.	.08	.01	.24
5.	.01	.02	.06	37.	.11	.02	.29
6.	.01	.02	.05	38.	.09	.02	.32
7.	.02	.01	.03	39.	.07	.01	.15
8.	.13	.05	.50	40.	.10	.02	.25
9.	.23	.04	.63	41.	.07	.01	.11
10.	.13	.03	.60	42.	.05	.01	.08
11.	.17	.03	.79	43.	.03	.004	.02
12.	.13	.02	.56	44.	.11	.02	.16
13.	.15	.01	.58	45.	.09	.001	.10
14.	.24	.04	.81	46.	.14	.02	.33
15.	.15	.03	.33	47.	.04	.01	.06
16.	.12	.02	.28	48.	.07	.01	.09
17.	.13	.02	.27	49.	.02	.003	.03
18.	.15	.03	.45	50.	.12	.01	.14
19.	.07	.01	.16	51.	.13	.02	.22
20.	.09	.02	.25	52.	.12	.03	.37
21.	.09	.02	.19	53.	.03	.01	.05
22.	.12	.02	.35	54.	.07	.01	.14
23.	.08	.02	.34	55.	.06	.01	.08
24.	.20	.03	.89	56.	.12	.02	.16
25.	.11	.02	.33	57.	.04	.01	.12
26.	.17	.03	.50	58.	.03	.02	.15
27.	.11	.02	.36	59.	.04	.03	.29
28.	.14	.03	.41	60.	.12	.04	.79
29.	.14	.03	.38	61.	.15	.05	.74
30.	.12	.03	.37	62.	.10	.05	.76
31.	.09	.004	.41	63.	.07	.03	.42
32.	.09	.03	.35				

Note :
Serial number of District is as per Appendix 2

I. Numerical

The series of the 262, RAMs of 63 districts has $\overline{X} = 4.15$, and $\sigma = 2.37$.

On the basis of the above considerations, there emerge five classes of the districts with various numbers of RAMs. There are absolutely no districts having number of RAMs equal to the $\overline{X}$ value. As also no markets falls under the class $\overline{X} - 3\sigma$, too. All the elements of this distribution have been demonstrated with the help of cartographic representation. Figure 5 clearly represents all elements related to this distribution.

I. $\overline{X} + 1\sigma$

There are fourteen districts in this distribution class : Meerut, Aligarh, Etah, Etawah, Farrukhabad, Kanpur Dehat, Kheri, Hardoi, Raebareli, Bahraich, Fatehpur, Allahabad, Jhansi, and Banda. While Meerut has a distinct location in the west; the next five districts constitute together a large area. Kheri, Hardoi, and Bahraich also make an irregular and non-compact contiguous area. Likewise, Raebareli, Fatehpur, and Allahabad also join together to give shape to one continguous area. However, Jhansi, and Banda are located separately in the southern part of U.P.

II. $\overline{X} + 2\sigma$

Ten districts have been observed in this distribution class: Saharanpur, Muzaffarnagar, Bijnor, Moradabad, and Budaun give rise to one long belt in the west. However, Agra district in the west, Sitapur district in the central, and Gonda district in the eastern U.P. have assumed individually lone locations. In the Bundelkhand, of course, a small compact area is coming up due to adjacent locations of Jalaun, and Hamirpur districts.

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
DISTRIBUTION : THEORETICAL -- GENERAL

Fig. 5
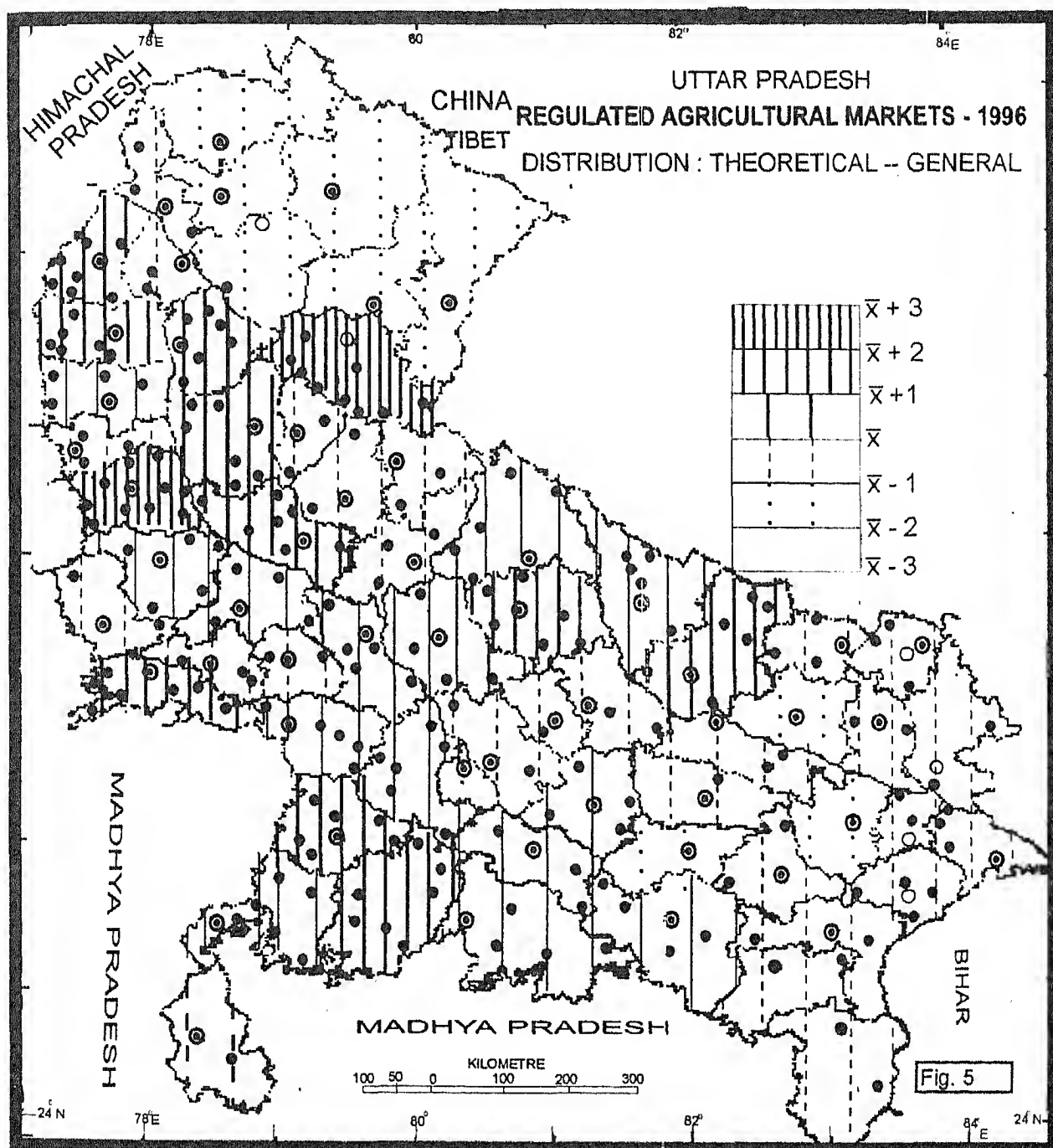
III. $\bar{X} + 3\sigma$

However, only two districts — Nainital, and Bullandshahr have statistical values falling under this distribution. Both the districts are located separately — one in the hill region while the other one in the west U.P. region.

IV. $\bar{X} - 1\sigma$

This distribution is the largest one — consisting of as high as 27 districts : Dehradun, Hardwar, Ghaziabad, Rampur, Bareilli, Pilibhit, Shahjahanpur, Mathura, Firozabad, Mainpuri, Unnao, Lucknow, Barabanki, Faizabad, Sultanpur, Siddharthnagar, Gorakhpur, Maharajganj, Deoria, Jaunpur, Mau, Ballia, Varanasi, Ghazipur, Mirzapur, Sonbhadra, and Lalitpur. Dehradun is located in hill area; Unnao, and Lucknow are in the central U.P.; and Lalitpur in the Bundelkhand region. All but Dehradun before Unnao in the list and all but Lalitpur after Lucknow in the list are located in western and the eastern parts of U.P. respectively. Ghaziabad, Mathura, Jaunpur, and Lalitpur have four separate locations. Hardwar, and Dehradun constitute one small area, Firozabad, and Mainpuri make another small area. Besides, there are four areas with this kind of distribution : Two areas in western U.P. and eastern U.P. formed of four districts each, one area of five districts (3 districts of eastern U.P. and 2 of central U.P.) and one area of six districts — all of the eastern U.P. area.

V. $\bar{X} - 2\sigma$

This sort of distribution spreads over ten districts : Uttarkashi, Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, and Almora in the hill

region; Kanpur Nagar in the central U.P. region while Basti, Azamgarh, and Pratapgarh are located in the eastern U.P. area.

Thus, the $\overline{X} - 1\sigma$ is the largest distribution in the terms of number of districts, 27; followed by $\overline{X} + 1\sigma$ with 14 districts; $\overline{X} + 2\sigma$ and $\overline{X} - 2\sigma$ with 10 districts each; and $\overline{X} + 3\sigma$ with only two districts.

II. Areal Context

In terms of areal surface, also the distribution of RAMs in various districts of U.P. has been examined statistically. For every district, the number of RAMs per 100 km^2 area have been found out. After getting such figures for all the districts, the $\overline{X}$, and the σ have been calculated and the distributional perspective has been analysed. Unlike the earlier case, there are six types of distributions. Figure 6 illustrates all these aspects clearly. Although, $\overline{X} - 3\sigma$ does not stand here too, there are 6 districts with $\overline{X}$ value of RAMs per 100 km^2. The $\overline{X}$ in this case comes to 0.09, while the value of the σ = 0.05. The details of the distribution are as follows :

I. $\overline{X}$

It is important to mention that the numbers of RAMs equal to $\overline{X}$ value also exist in some districts of the state. There are six such districts : Pilibhit, Sahanjahanpur, Kanpur Dehat, Kheri, Bahraich, and Gorakhpur. In this case, Gorakhpur, and Kanpur Dehat have assumed independently separate locations while all the rest districts make one large area along the Nepal Border in the north.

II. $\overline{X} + 1\sigma$

This is the largest class of the distribution under study. It consists of 23 districts. Dehradun, Nainital, and Sitapur have isolated locations.

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
DISTRIBUTION : THEORETICAL --
AREAL CONTEXT

Fig. 6
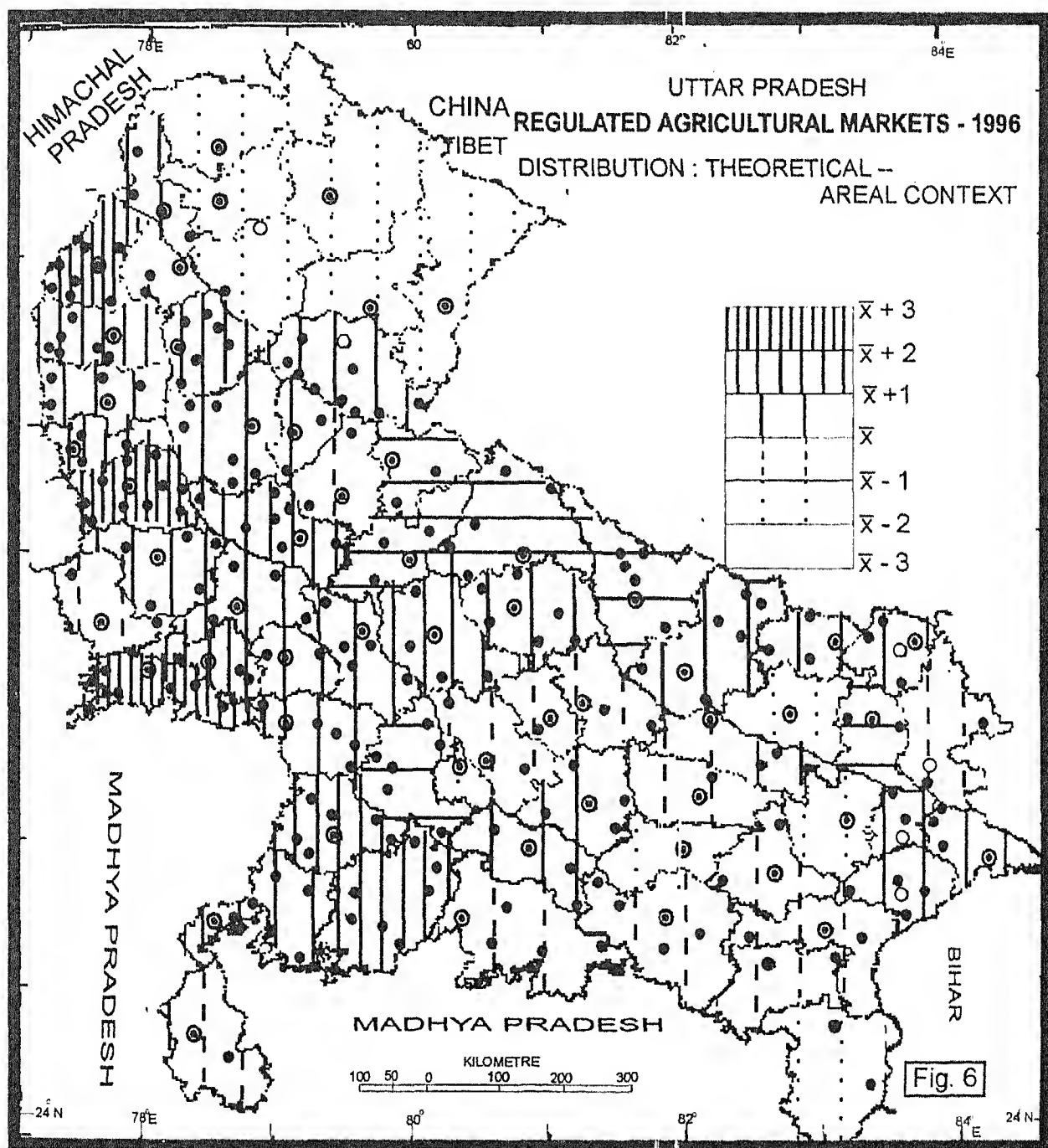
Raebareli, Fatehpur, and Allahabad have one contiguous area —
although not a compact one — Jhansi, and Hamirpur are located side
by side; Mau, Ballia, and Ghazipur also make one contiguous area;
Gonda, Siddharthnagar, and Maharajganj make another area. Meerut,
Moradabad, and Rampur make yet another area of this type of
distribution. Thus, these three areas have three districts each. The
largest number of districts — six — under the present distribution is
included in the biggest group. Aligarh, Etah, Mainpuri, Etawah,
Farrukhabad, and Kanpur Nagar together present one continguous
area.

III. $\overline{X} + 2\sigma$

This class has six districts out of which Muzaffarnagar, and Bijnor
make one area, while all the rest i.e. Ghaziabad, Budaun, Ferozabad,
and Jalaun have isolated locations.

IV. $\overline{X} + 3\sigma$

This is a small class in terms of number of districts. There are only
three districts — Saharanpur, Bullandshahr, and Agra — and all of
these have lone locations .

V. $\overline{X} - 1\sigma$

This class is the second largest class after the $\overline{X} - 1\sigma$ and it includes 15
districts. Out of these, four districts i.e. Bareilly, Mathura, Deoria, and
Lalitpur stand isolated while the rest 11 districts joining each other,
serially, are Hardoi, Unnao, Lucknow, Barabanki, Faizabad, Sultanpur,
Jaunpur, Allahabad, Banda, Varanasi, and Mirzapur.Thus, these
districts give form to a large area under this type of distribution.

VI. X - 2σ

This type stands third as regards the number of districts under a particular class. This class has 10 districts; 6 districts of the hill region are — Uttarkashi, Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, and Almora. Thus, the entire hill region excepting, ofcourse, two districts — Dehradun, and Nainital — is included in this class. Besides, four districts of eastern U.P. also are included but all of these — Basti, Azamgarh, Pratapgarh. and Sonbhadra — have lone locations.

Thus, under this type of distribution, $\overline{X} + 1\sigma$ has the largest number of districts, followed by $\overline{X} - 1\sigma$, $\overline{X} - 2\sigma$, $\overline{X}$, and $\overline{X} + 2\sigma$, and at the end is the $\overline{X} + 3\sigma$ class. The various distributions are depicted through the figure already referred.

III. Population Context

Population is a significant factor playing, rather, the key role in the distribution of various cultural elements . In the present case, the numbers of RAMs have been calculated for 10,000 persons in each of the 63 districts of the state. Thereafter, the $\overline{X}$ and the σ values have been found out and the distributional variations have been presented through six classes, i.e. $\overline{X}$, $\overline{X} + 1\sigma$, $\overline{X} + 2\sigma$, $\overline{X} + 3\sigma$, $\overline{X} - 1\sigma$, and $\overline{X} - 2\sigma$. There are no districts falling under the $\overline{X} - 3\sigma$ class. The all distribution classes have been demonstrated through Figure 7 . The value of the $\overline{X}$ = 0.02 while the value of σ = 0.01 in the present series. The further details of the distribution are as follows :

I. $\overline{X}$

This class is the one which includes the highest number of districts and makes the large areal coverage in the state. The number of districts is as high as 22. However, three districts — Raebareli, Hardoi, and

Sonbhadra are located separately. Pilibhit joins Shahjahanpur, while Ballia, and Ghazipur are adjacent to each other. Gonda, Bahraich, Siddharthnagar, and Maharajganj make one area, while other three districts — Meerut, Moradabad, and Rampur constitute another area of this distribution. There are two areas consisting four districts each — Tehri Garhwal, Pauri Garhwal, Chamoli, and Pithoragarh of the hilly region give rise to one big area; while Aligarh, Mathura , Etah, and Mainpuri together present another big area of distribution under the present reference.

II. $\overline{X} + 1\sigma$

This distribution stands third as regards the number of districts under the class. There are 14 districts in this class of which Hardwar, Budaun, Lalitpur, and Banda have lone locations. Bijnor, and Muzaffarnagar make one small area while Kheri, and Sitapur make another such area. Rest six districts together make a large area. These district are : Agra, Firozabad, Etawah, Farrukhabad, Kanpur Dehat, and Fatehpur.

III. $\overline{X} + 2\sigma$

This class of distribution has five districts, out of which Uttarkashi, Dehradun, and Saharanpur make one area in the north-west corner of the state, while Bullandshahr, and Jhansi assume isolated locations in the west and south U.P. respectively.

IV. $\overline{X} + 3\sigma$

This is the smallest class and includes only 3 districts out of which one i.e. Nainital is located in northern part while Jalaun, and Hamirpur have assumed locations in the southern part of U.P. The southern districts join each other and make one small area.

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
DISTRIBUTION : THEORETICAL --
POPULATION CONTEXT

Fig. 7

V. $\overline{X} - 1\sigma$
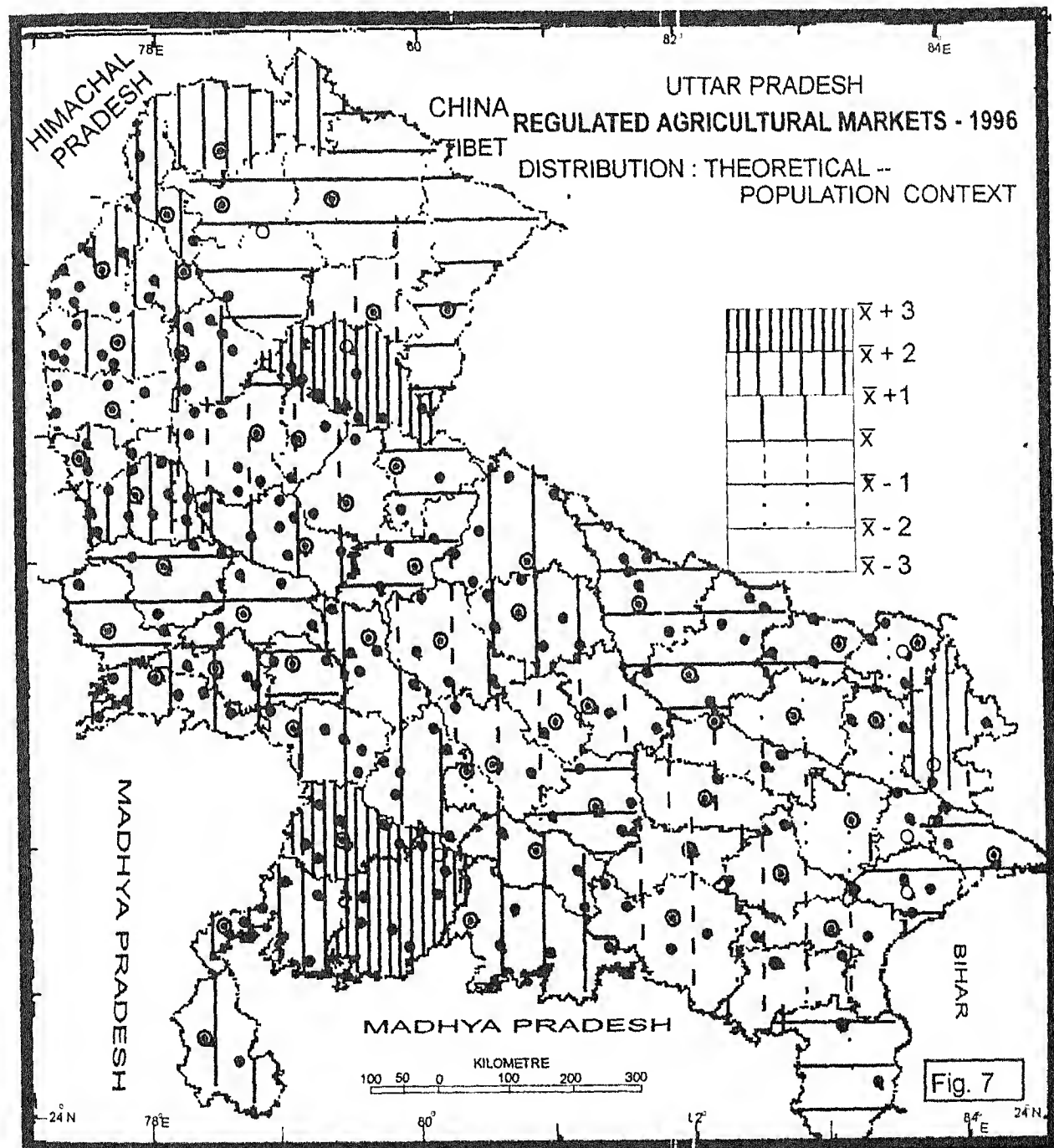
This is the second biggest class in terms of number of districts. This class has 15 districts in all. Thus, this follows the $\overline{X}$ class which has 22 districts. Out of the 15 districts of this class, 3 namely — Almora, Ghaziabad, and Raibareli are located separately while Deoria, and Mau make one small area. Rest 10 districts make one large area under this class of distribution. These districts are : Unnao, Lucknow, Barabanki, Faizabad , Sultanpur, Jaunpur, Pratapgarh, Allahabad, Varanasi, and Mirzapur. In case, one excludes the Bareilly district, this large area is rather a contiguous and compact area.

VI. $\overline{X} - 2\sigma$

This is the second smallest class of the distribution under study. It has four districts. One of these, Kanpur Nagar has a lone location while the rest three are located in the eastern U.P. region — Basti, Gorakhpur, and Azamgarh together make one small area.

Thus, under this type of distribution, the largest class is the one which has value equal to $\overline{X}$ only. This is, rather significant in terms of distribution as per population as this class has even more than one-third of the total number of districts of the state. The smallest class is the $\overline{X} + 3\sigma$ having as small as three districts only.

IV. Village-Context

The number of villages also have great significance while it is referred to location and distribution of market centres, in the case, one in hand, the numbers of RAMs per 100 inhabited villages have been calculated for all the districts of the state. Then the $\overline{X}$ and σ values have been found out and the distributional variations have been analysed through

six classes i.e. $\overline{X}$, $\overline{X}$ + 1σ, $\overline{X}$ +2σ, $\overline{X}$ + 3σ, $\overline{X}$ - 1σ, and $\overline{X}$ - 2σ. There are, however, no districts under $\overline{X}$ - 3σ class. The details of this distribution have been explained and illustrated through Figure 8 also. The value of $\overline{X}$ = 0.29, while the value of σ = 0.23. The further details of the distribution are as follows :

I. $\overline{X}$

Although, this class is present in the distribution in the present case, yet the number of districts under this is, rather, too small — just two only and both of these — Raebareli, and Lalitpur have assumed independent locations in the eastern and the southern parts of the state respectively.

II. $\overline{X}$ + 1σ

This is the second largest class in respect of number of districts under this type of distribution. This has 18 districts. Only one district, Maharajganj has the isolated location in the north-eastern part of the state. There are two areas including two districts each — Bijnor, and Nainital on the one hand while Fatehpur, and Banda on the other. There is one area including three districts : Kheri, Sitapur, and Bahraich. These together form a small area — rather, a compact one. All the rest — ten — districts are Budaun, Aligarh, Mathura, Etah, Firozabad, Mainpuri , Etawah, Farrukhabad, Kanpur Dehat, and Kanpur Nagar. All these ten districts join to give rise to a large area under this distribution.

III. $\overline{X}$ + 2σ

This is a class including six districts — Dehradun, Saharanpur, and Hardwar making one area while not far off is the another area including Meerut, and Ghaziabad. However, Jalaun is located isolated

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
DISTRIBUTION : THEORETICAL --
VILLAGE CONTEXT

Fig. 8
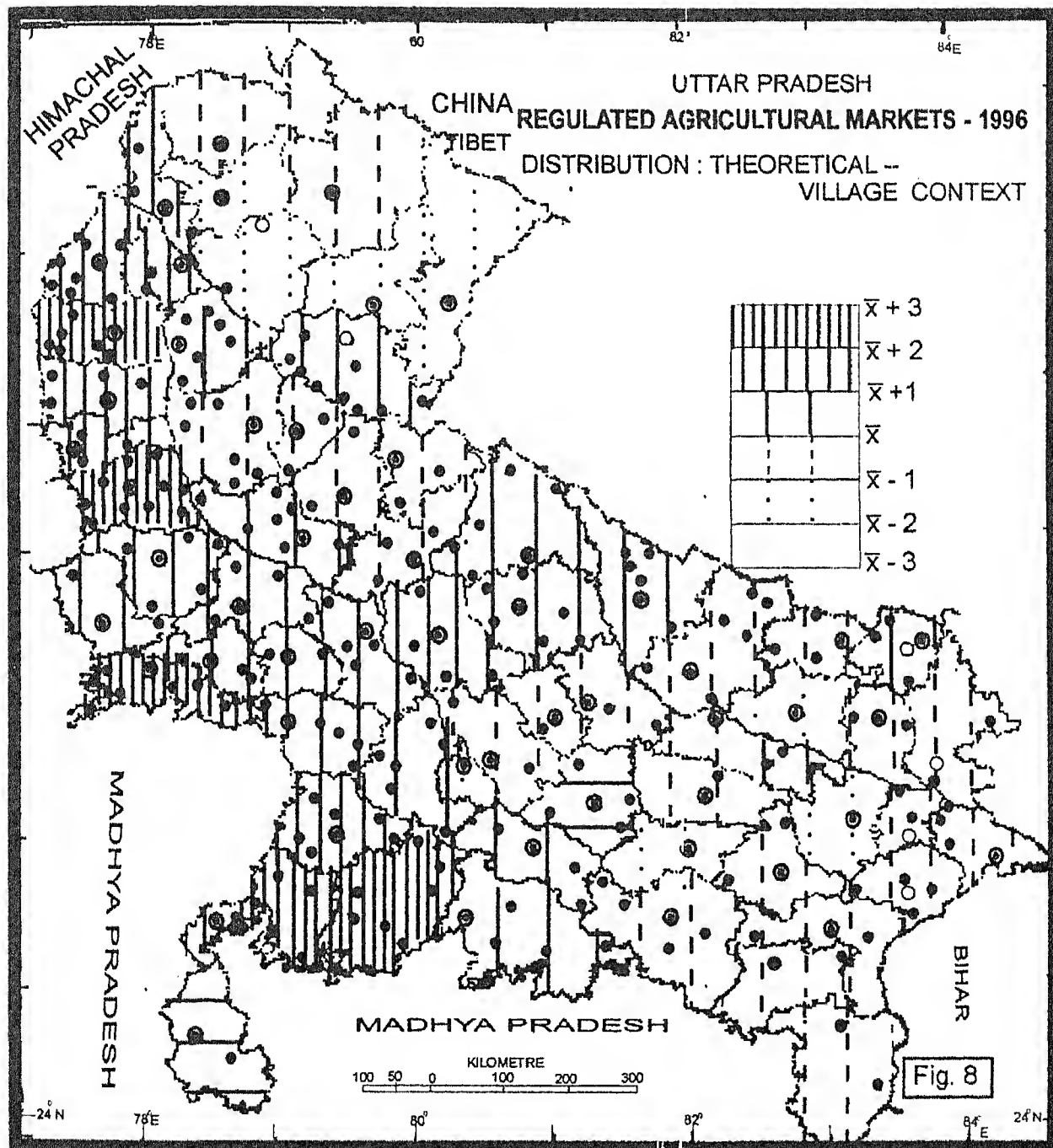
in the south. Thus, it includes two small areas, and one is isolated location.

IV. $\overline{X} + 3\sigma$

This is the second smallest class of the distribution in reference. It has five districts namely, Muzaffarnagar, Bullandshahr, Agra, Jhansi, and Hamirpur. While the last two join each other to give rise to a small area all the rest — three — districts have separate/isolated locations in the western U.P. region.

V. $\overline{X} - 1\sigma$

This is the largest class including the highest number of districts i.e. 25. This number is considerably high and has even more than one-third of the total number of the districts of the state. However, it is also important to mention that while only two districts namely Uttarkashi, and Chamoli make one small area, all the rest 23 districts together make a very large area under this distribution. This large area covers a large part of the state. The districts included in this are : Moradabad, Rampur, Bareilly, Pilibhit, Shahjahanpur, Hardoi, Unnao, Lucknow, Barabanki, Gonda, Faizabad, Sultanpur, Siddharthnagar, Gorakhpur, Deoria, Jaunpur, Mau, Ballia, Ghazipur, Varanasi, Allahabad, Mirzapur, and Sonbhadra.

Thus, this is a long belt extending from western U.P., to eastern U.P. in a continous way. Out of the 23 districts, 15 districts fall in the eastern, three in the central, while five in the western U.P. region.

VI. $\overline{X} - 2\sigma$

This class has seven districts and is the third largest as regards the number of districts. There are 7 districts — Tehri Garhwal, Pauri Garhwal, Pithoragarh, Almora, Basti, Azamgarh, and Pratapgarh. Out

of these, the first four belong to the hill region and make one continguous (but in shape not a compact) area. The rest three districts have separate locations each and all are located in the eastern part of U.P.

4.4.3 DENSITY DISTRIBUTION

The density refers to the number of RAMs per unit area. In the present case, the number of RAMs have been calculated as per 1000 km^2 for all the 63 districts of the state. When comparison has been done within the state, much variation is observed. The density of RAMs of 63 districts of U.P. varies from 0.1 market to 2.4 RAMs. That is to say that density of latter districts is 24 times the density of RAMs per 1000 km^2 than that of the former density districts. Also, it is observed that as low as 0.1 to 1.0 market per 1000 km^2 are found in 33 districts while 1.12 to 1.5 RAMs is the density in 25 districts. The average density of the state comes to 0.97 RAMs per 1000 km^2.

For the convenience, the entire U.P. has been divided into five density classes and these have also been cartographically depicted through Figure 9. The further details of the densities of various classes are as follows :

I. Very Low Density Areas

This class varies from 0.1 market to 0.5 market per 1000 km^2 . This density within the state of U.P. is, rather, too low when considered and compared with the state average. There are fourteen districts which have densities falling under this class : Uttarkashi, Chamoli, and Pithoragarh (0.1) ; Tehri Garhwal, Pauri Garhwal, and Almora (0.2) : Basti, Azamgarh, Pratapgarh, and Sonbhadra (0.3) ; Deoria, Mirzapur, and Lalitpur (0.4); and Sultanpur (0.5). Six districts of hill region of

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
DENSITY DISTRIBUTION

Very High
High
Medium
Low
Very Low

Fig. 9
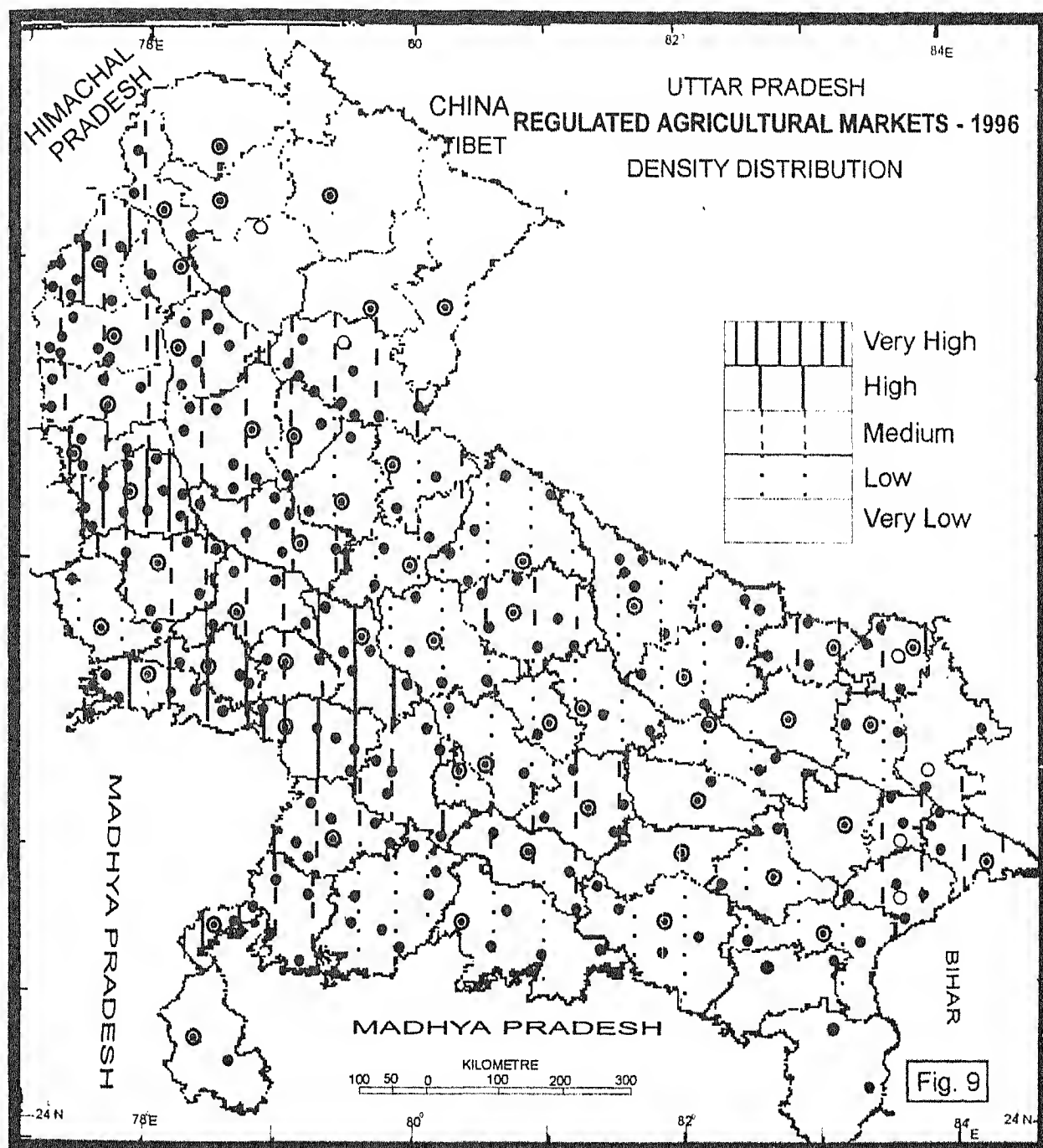
U.P., seven districts of eastern U.P. and one district of Bundelkhand, thus, have too low densities. These districts have only one/two market(s) each. All the hill districts under this class have only one market each. Excepting Basti, Azamgarh, and Pratapgarh, the others — Sultanpur, Deoria, Sonbhadra, Mirzapur, and Lalitpur have two markets each. The hilly districts make one area; Pratapgarh, Sultanpur, and Azamgarh together form another area; Sonbhadra, and Mirzapur form yet another area; but Deoria, Lalitpur, and Basti have the isolated locations.

II. Low Density Areas

This class varies from 0.5 RAM to 1.0 RAM per 1000 km^2. It has 19 districts. Out of these are : Varanasi (0.6); Gonda, and Hamirpur (1.0); Mathura, Hardoi, and Lucknow (0.8); Pilibhit, Shahjahanpur, Kanpur Nagar, Kheri, Bahraich, and Gorakhpur (0.9); Bareilly, Unnao, Barabanki, Faizabad, Jaunpur, Allahabad, and Banda (0.7). Thus, only two districts have their densities equal to 1.0 RAM otherwise, all the rest have the densities below 1 RAM. In this class, Kanpur Nagar, Unnao, Lucknow, Hardoi, Barabanki, Bahraich, Kheri, Pilibhit, Bareilly, Shahjahanpur, Gonda, and Faizabad make one large area; while Jaunpur, Allahabad, Varanasi, and Banda form another area, but Mathura, Hamirpur, and Gorakhpur have assumed isolated locations.

III. Medium Density Areas

This class varies from 1.0 to 1.5 RAMs per 1000 km^2 in the districts. There are 25 districts falling in this class. Hence, this is the largest class of density distribution. The districts included in this class are : Etah, Mainpuri, Raebareli, Siddharthnagar (1.1); Moradabad, Aligarh, Kanpur Dehat, Sitapur, Mau, Fatehpur, Ghazipur, and Jhansi (1.2); Dehradun, Nainital, Hardwar, Meerut, Rampur, Ballia (1.3); Etawah, Farrukhabad, Maharajganj (1.4); and Ghaziabad, Bijnor, Budaun, and

Jalaun (1.5). There are eight districts with 1.2, six districts with 1.3, four districts each with 1.1 as also 1.5, and three districts with 1.4 RAMs per 1000 km^2. Under this class, Dehradun is isolated while Maharajganj and Siddharthnagar have assumed one area. Jalaun, and Jhansi on the one hand, while Mau, Ballia, and Ghazipur on the other also make two other small areas. Thus, two areas have two districts each while one has three districts. Thus, the rest 17 districts together make one large area which is quite distinct.

IV. High Density Areas

The density value of this sub-class varies from 1.5 to 2.0 RAMs per 1000 km^2 area. However, there are only three districts, under this class : Muzaffarnagar, Firozabad with 1.7 each, while only Agra with 2.0 density value. Here, Agra, and Firozabad together make one area, while Muzaffarnagar stands alone.

V. Very High Density Areas

This is the smallest class with regard to the number of districts. This class has the density above 2.0. However, there are only 2 districts — Saharanpur, and Bullandshahr which have density as 2.3, 2.4 respectively. Both of these are located in western U.P. and have separate isolated locations. The density distribution has also been shown in Table 4.4.

Table 4.4 : U.P. : Density Distribution of RAMs (per '000 km^2)

Density	No. of Districts	Percentage of Districts
(1) Very Low : Below 0.5	14	22.2
(2) Low : 0.5 – 1.0	19	30.6
(3) Medium : 1.00 - 1.5	25	39.5
(4) High : 1.5 - 2.0	3	4.6
(5) Very High : More than 2.0	2	3.1
Total	63	100.00

4.4.4. PATTERNS OF DISTRIBUTION

The distribution of RAMs of U.P. has been examined in the light of a well known technique, the Nearest Neighbour Analysis (NNA). The existing patterns of the spatial distribution of markets in various districts of the state have been exposed, that is to say, whether there are — clustered patterns or whether there are other ones which support some kind of orderly or regular distribution patterns; or just the random patterns of distribution of the markets in question.

The concept of Nearest Neighbour Analysis was first developed by plant ecologists, Clark and Evans (1954, pp. 445-453) to measure the pattern of incidence of different species of plants. It was subsequently applied to the study of settlement patterns as to examine objectively the clustered and dispersed spatial distributions as well as the degree (intensity) of clustering and dispersal. It quantitatively defines a scale related to three absolute bench marks. The scale, in effect, measures the degree of departure of an observed spatial distribution from a theoretical random distribution (Yeates, 1968, p. 31). When one extremity on the scale shows the absolute clustering, the other one is an indication of the absolute dispersal i.e. hexagonal or equi-distant or regular pattern. The importance of the index is that it provides a test for non-randomness and allows on a continous scale, comparison to be made of two or more spatial distributions (Hammond and Mc Cullagh, 1978, p. 270). The underlying principle in the method is a straight line measurement of distance separating any phenomenon from its nearest neighbour in space. It involves the comparison between the observed nearest distance of any phenomenon and the distance which could be expected in a random pattern. The observed nearest distance is expressed as the mean nearest distance of all the points of the phenomenon concerned from their nearest neighbouring locations.

The Nearest Neighbour Technique involves the following formulations :

$$\overline{D}_a = \frac{i\Sigma^N d_{i=1}}{N}$$

where $\overline{D}_a$ = the mean actual nearest neighbour distance,

di = the distance from the ith point to its own nearest neighbour, and

N = the number of points or locations in the pattern.

The expected spacing (distance) in a random pattern is computed by the following mathematical expression :

$$\overline{D}e = \frac{1}{2}\sqrt{\frac{A}{N}} \qquad \text{or} \qquad \overline{D}e = \frac{1}{2\sqrt{\frac{N}{A}}}$$

Where $\overline{D}e$ = the expected mean distance,

A = the area of the territory, and

N = the number of points in the pattern.

The ratio of A to N gives a measure of density of points per unit area.

The nearest neighbour measure is obtained by the following quantitative construct :

$$R_N = \frac{\overline{D}a}{\overline{D}e}$$

Where R_N = the departure from randomness in the context of the nearest neighbour,

$\overline{D}a$ = the mean actual nearest neighbour distance, and

$\overline{D}e$ = the expected mean distance.

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
NEAREST NEIGHBOURS

Fig. 10

130
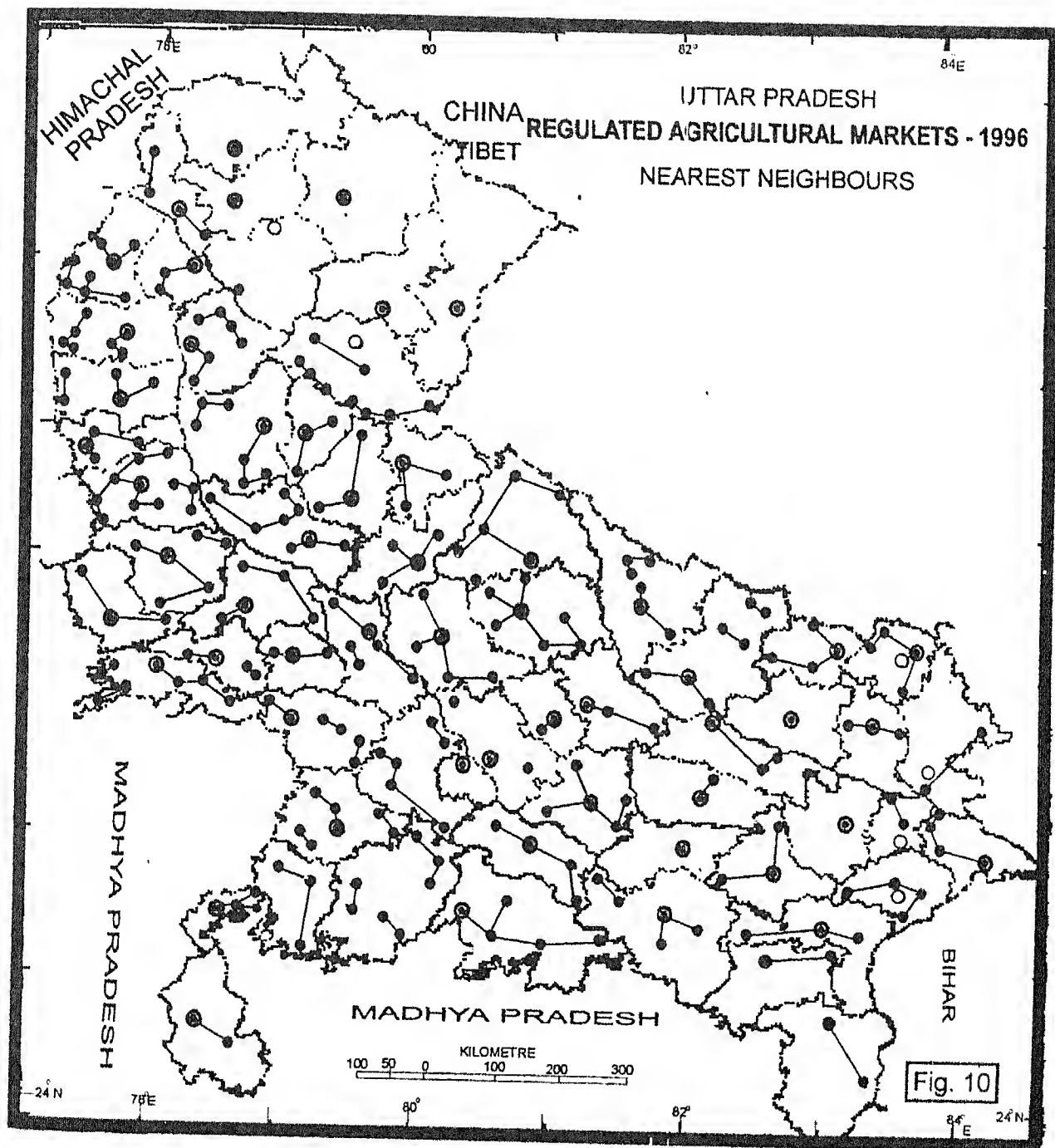
UTTAR PRADESH : REGULATED AGRICULTURAL MARKETS
DISTRICTS ON Rɴ SCALE

2.1491 Regular/ Hexagonal

2.1

Dehradun, Jaunpur —
Mathura, Fatehpur

Kheri, Mirzapur, Sonbhadra — 2.0

Pilibhit

1.9

Bareilly, Banda —

Meerut — Aligarh
1.8

Mau —

Farrukhabad — Unnao
Ghazipur
Raebareli — 1.7
Mahrajganj — Agra
Etah — Nainital

Hardoi — 1.6 Bullandshahr
Siddharthnagar — Sitapur
Badaun — Kanpur Dehat

Shahjahanpur — 1.5
Saharanpur

Lucknow — 1.4
Ballia —

Etawah

Jalaun — 1.3
Ghaziabad — Moradabad
Manpuri —
Firozabad, Gorakhpur
Bijnor — 1.2

Deoria — Jhansi
Lalitpur — Barabanki, Allahabad
Rampur — 1.1

Bahraich

Muzaffarnagar — 1.0000 Random

Hardwar — 0.9

Varanasi
0.8
Faizabad — Sultanpur

0.7

0.6

0.5

Hamirpur — Gonda
0.4

0.3

0.2

0.1

0.0000 Clustered

Fig. 11

Generally, the geographers have applied this index for analysing the distributional patterns of different elements (like settlements, markets etc.) in the contexts of different regions. Dixit in 1984 (pp. 51-63) and in 1988 (pp. 78-84) employed this technique to analyse the patterns of markets of the Umland of Kanpur, and the district of Hamirpur respectively.

The exercise has been done with the help of two figures also. Figure 10 shows the nearest neighbours of RAMs of the study area, while Figure 11. gives the R_N scale of the index ranging from 0.0 to 2.1491 and on this, the locations of the various districts of the state have been marked to exhibit the distributional patterns of the RAMs of the districts. There are ten single market districts — Uttarkashi, Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, Almora, Kanpur Nagar, Basti, Azamgarh, and Pratapgarh. Hence, the calculations for these districts have not been made. Thus, the calculations have been done for 53 districts only and therefore in the R_N scale also these locations have been marked. The details of the statistical values in this context have been given in Table 4.5. The results reveal that all the districts of the state do not have just one and the same pattern rather different ones. There are no districts which have absolutely clustered or regular patterns. However, there is just one district, Muzffarnagar, which has the absolutely random pattern of distribution. All the other districts assume their locations in between the clustered and the random on the one hand, while the regular and the random on the other.

Table 4.5 : U.P. : Distribution of RAMs – Nearest Neighbour Statistics

District Sl. No.	$\overline{Da}$	$\overline{De}$	R_N	District Sl. No.	$\overline{Da}$	$\overline{De}$	R_N
1.	0	2	-	33.	27.8	17.30	1.61
2.	30.00	13.90	2.06	34.	22.6	14.32	1.58
3.	0	-	-	35.	34.0	19.49	1.75
4.	0	-	-	36.	25.0	17.78	1.41
5.	0	-	-	37.	25.9	15.18	1.71
6.	0	-	-	38.	17.8	16.93	1.05
7.	0	73.38	-	39.	21.7	19.16	1.13
8.	22.7	13.74	1.65	40.	6.9	16.21	0.43
9.	15.9	10.74	1.48	41.	15.0	19.39	0.77
10.	12.7	14.03	0.91	42.	18.0	23.55	0.76
11.	12.0	11.97	1.00	43.	0	-	-
12.	25.4	13.99	1.82	44.	23.5	14.78	1.59
13.	16.5	12.73	1.30	45.	20.7	16.65	1.24
14.	15.9	9.95	1.60	46.	23.0	13.58	1.69
15.	15.7	12.77	1.23	47.	0	26.09	1.15
16.	18.7	14.60	1.28	48.	39.7	18.35	2.06
17.	26.0	14.05	1.08	49.	0	-	-
18.	20.03	12.71	1.57	50.	26.0	14.64	1.78
19.	34.7	18.53	1.87	51.	19.0	13.65	1.39
20.	33.0	17.08	1.93	52.	33.8	14.41	2.03
21.	25.5	16.91	1.51	53.	0	-	-
22.	26.5	14.46	1.83	54.	21.6	19.06	1.13
23.	42.0	17.82	2.03	55.	17.0	20.6	0.83
24.	18.9	11.22	1.68	56.	25.0	14.53	1.72
25.	29.2	14.92	1.96	57.	11.0	16.81	2.01
26.	15.0	12.15	1.24	58.	41.0	16.80	21.0
27.	19.3	15.17	1.27	59.	28.0	25.10	1.12
28.	18.0	13.43	1.34	60.	20.5	17.73	1.16
29.	23.0	13.35	1.73	61.	16.7	12.77	1.31
30.	22.6	14.60	1.55	62.	7.14	16.00	.045
31.	0	-	-	63.	35.6	19.05	1.87
32.	36.0	17.89	2.01				

Note :
The serial number of district follows the order of the district-names shown in Appendix 2.

I. Random Pattern

It is quite surprising and at the same time interesting too, that in the entire series of 53 districts, one district — Muzaffarnagar has got the $R_N = 1.0$ showing the absolute random pattern of the distribution of RAMs. There are 11 markets in this district — the largest number of markets any district has in entire state. This also reveals that since there are many markets in the district which are not located in just one particular area of the district nor these have been designed to be located at regular or equal distances amongst them, the feature of spatial distribution come to the fore showing a random pattern.

II. Clustered Pattern

This pattern is absent in absolute form in the entire study region as there are no districts having $R_N = 0.0$.

III. Regular/Hexagonal/Uniform pattern

Similar to the case of clustered pattern, this pattern is also absent in the absolute form in the entire region as there are no districts which have $R_N = 2.1491$.

However, in between the clustered and the random points of the R_N scale on the one hand, as also the hexagonal/regular/uniform and the random points on the other, all the rest i.e. 52 districts have occupied points/locations. The distributional patterns of RAMs of various districts are given in Table 4.6.

Table 4.6 : U.P. : Distribution of RAMs — Locational Patterns

Distributional Pattern	Districts		Districts with R_N Values
	Number	Per cent age	
(1) Regular : R_N = 2.1491	-	-	-
(2) Near Regular : R_N = 2.1491-1.855	10	18.8	Dehradun, Jaunpur (2.06); Mathura, Fatehpur (2.03); Kheri, Mirzapur, Sonbhadra (2.01); Pilibhit (1.93); Bareilly, Banda (1.87)
(3) Near Regular-Random : R_N = 1.855-1.570	15	28.3	Aligarh (1.83); Meerut (1.82); Mau (1.78); Unnao (1.75); Farrukhabad (1.73); Ghaziabad (1.72); Raebareli (1.71); Maharajganj (1.69); Agra (1.68); Etah (1.66); Nainital (1.65); Hardoi (1.61); Bullandshahr (1.60); Siddharthnagar (1.59), Sitapur (1.58).
(4) Regular-Random : R_N = 1.570	1	1.8	Budaun
(5) Near Random-Regular : 1.570-1.285	8	15.0	Kanpur Dehat (1.55); Shahjahanpur (1.51); Saharanpur (1.48); Lucknow (1.41); Ballia (1.39); Etawah (1.34); Jalaun (1.13); Ghaziabad (1.30).
(6) Near Random : 1.285-1.00	12 + 4 (w.r.t. item 8)	30.7	Moradabad (1.28); Mainpuri (1.27); Firozabad (1.24); Bijnor (1.23); Jhansi (1.16), Deoria (1.15); Barabanki, Allahabad (1.13); Lalitpur (1.12); Rampur (1.08); Bahraich (1.05).
(7) Random : 1.000	1	1.8	Muzaffarnagar
(8) Near Random : 1.000 - 0.750	(4 included with item 6)	-	Hardwar (0.91); Varanasi (0.83); Faizabad (0.77); Sultanpur (0.76)
(9) Near Random-Clustered : 0.750 - 0.500	-	-	-
(10) Clustered-Random : 0.500	2	3.6	-
(11) Near Clustered-Random : 0.500 - 0.250	-	-	Hamirpur (0.45), Gonda (0.43)
(12) Near clustered : 0.250 -0.000	-	-	-
(13) Clustered : 0.000	-	-	-
	53	100	

The study reveals that the present technique, although, is a good measure of spatial distribution, but it is not so effective in the cases of the districts where the number of RAMs are limited such as just one / two / even three. There are as many as 29 districts in the states which

have less than 4 RAMs each. And yet, the patterns which have emerged give an idea about the general nature of spatial distribution of RAMs in various districts of U.P. The variations in the patterns are, positively, due to the total impact of the physical and cultural elements of the area under study.

4.4.5 FACTORS AFFECTING DISTRIBUTION

The generalised observation of the distribution of the RAMs of U.P. on its map shows that the nature of terrain, undoubtedly, is a significant factor directly affecting the distribution of RAMs of the hill areas. In addition, the hill districts have only a few RAMs, obviously, due to small population, lack of demand for large volumes of goods, poor transportation facilities, etc. Further, the southern part of U.P. consisting of plateau area also has more or less the similar situation. However, the entire plain region of the state is characterized by very high number of RAMs, especially in certain pockets, due to high production, heavy demand for goods, market surplus, development of road network etc. In general, the distribution of periodic markets has been analysed with the help of economic location theory (Skinner, 1964). The markets serve the demands of the population of their respective hinterlands. Hodder (1965, p. 51) has examined the distribution of markets in the light of population distribution of the particular area studied. There are various significant factors such as physical, social, cultural, and economic etc. affecting the distribution of RAMs in the region.

In the begining it was thought to show whether the numbers of RAMs of districts go according to the population in various districts of state, but at a latter stage it was decided to examine the extent of the effects of various factors like area, population, number of villages .... marketable surplus on the number of RAMs in various districts.

UTTAR PRADESH : REGULATED AGRICULTURAL MARKETS ●

DISTRIBUTIONAL RELATIONSHIP : DISTRICT AREA-MARKETS
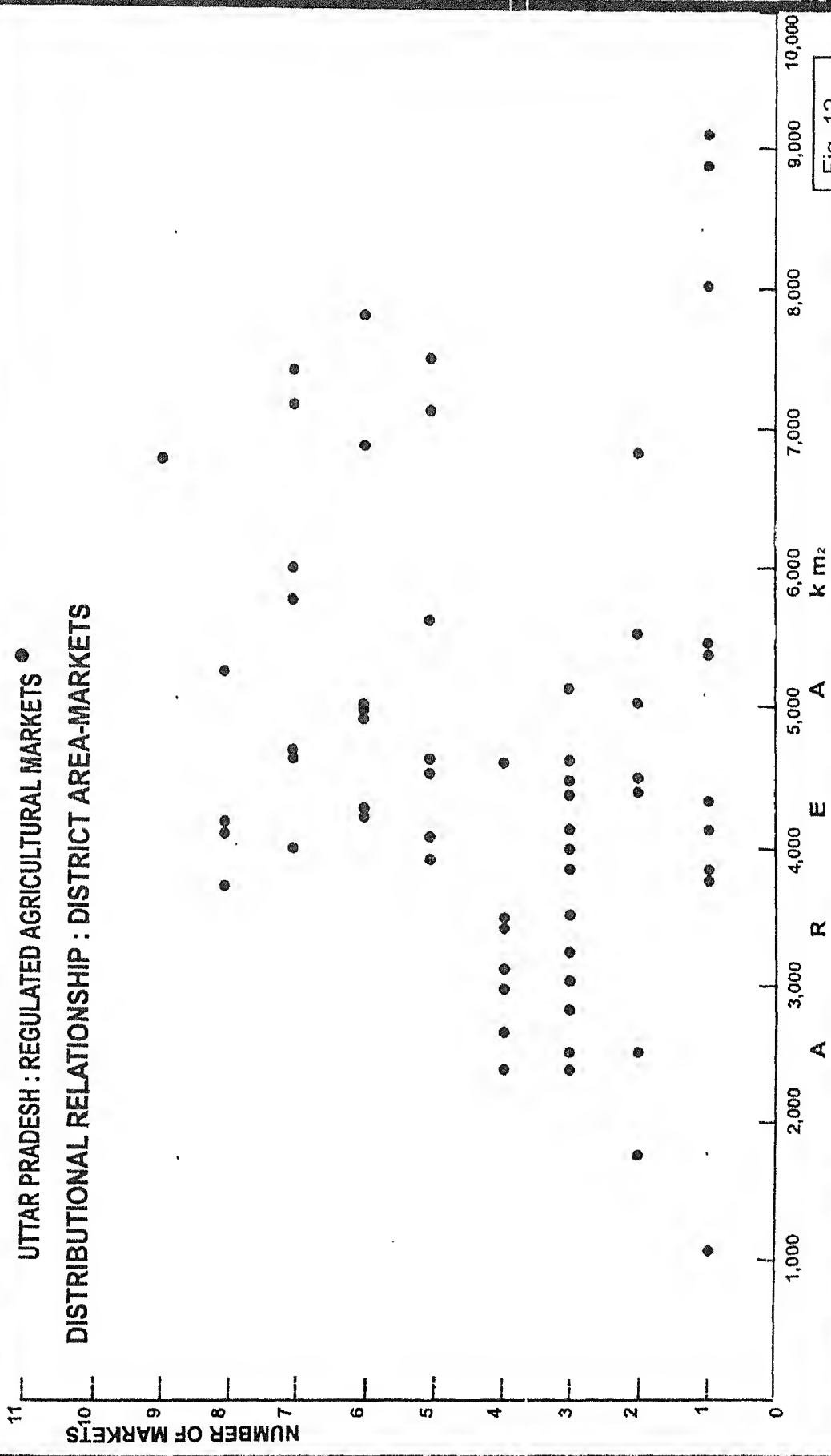
Fig. 12

Exhaustive statistical exercises have been done to unfold, especially, the bearing of area, population, number of inhabited villages, market density per 100 km^2, road-length per 100 km^2, and the marketable surplus of the districts separately on RAM — numbers in the respective districts.

The total of marketable surplus of 10 major crops, namely, rice, wheat, jowar, bazra, maize, barley, gram, arhar, masoor, and mustard of the districts of U.P. have been taken into consideration. The Directorate of Agriculture of U.P. (1997, p. 90-152) has compiled the data for the year 1994-95. The further processing of the data has been done by the scholar himself before ploting the same on the scatter diagram (Figures 12-16).

The series has seven variables at the district level including the number of RAMs. It has examined 6 variables with reference to the distribution of RAMs in various districts : (i) area, ii) population (iii) inhabited villages (iv) RAMs per 100 km^2, (v) Road-length per 100 km^2 area and (vi) marketable surplus.

The correlation matrix is given in Table 4.7. Although, the matrix shows the correlation of each of the variables to every other variable of the series only the coefficient of the correlation between the RAMs and area, RAMs and population, RAMs and inhabited villages, RAMs and road-length per 100 km^2, and RAMs and marketable surplus of the districts have been included in the analysis as follows :

138

UTTAR PRADESH : REGULATED AGRICULTURAL MARKETS

DISTRIBUTIONAL RELATIONSHIP : DISTRICT POPULATION-MARKETS
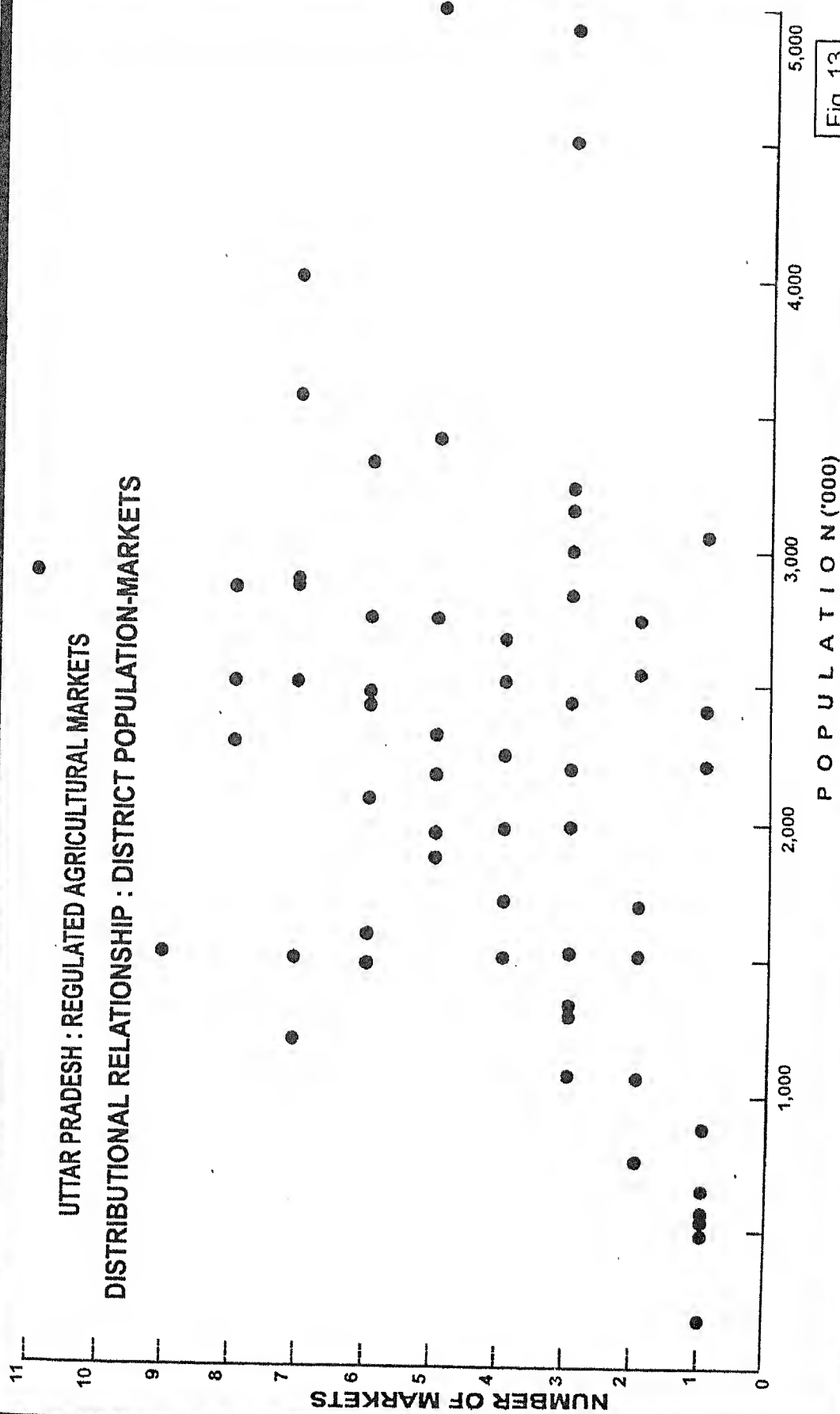
Fig. 13

Table 4.7 : U.P. : RAMs Distribution Affecting Factors — Co-efficient of Correlation Matrix

Correlations	1	2	3	4	5	6	7
1.	1.0000	0.1368	0.2955*	0.1148	0.8020**	0.3373	0.4635
2.	0.1368	1.0000	-0.0376	0.2322	-0.3985**	-0.5144**	0.4635**
3.	0.2955*	-0.0376	1.0000	.04909**	0.1862	.4830**	0.3571*
4.	-0.2148	0.2322	0.4909**	1.0000	-0.4369**	0.1584	0.1917
5.	0.8020**	-0.3985**	0.1862	-0.4369**	1.0000	0.2421	0.2954
6.	0.0373	-0.5144**	0.4830**	0.1584	0.2421	1.0000	0.0141
7.	0.4635**	0.0439	0.3571*	0.1917	C.2954*	0.0141	1.0000

1 = Number of RAMs, 2 = Area Km^2, 3 = Population, 4 = Number of Inhabited villages, 5 = Number of RAMs per 100 kms^2 area, 6 = Road-length per 100 km^2 area, 7 = Marketable Surplus. All these relate to the district level units of the state.

Five scatter diagrams have been drawn, Figure 12 – 16. The abscissa, the X-axis, in various cases are showing the variables : area, population, number of inhabited villages, road-length per 100 km^2 , and the market surplus respectively. The ordinate, the Y-axis shows the RAMs in all the five cases. The observation of the various scattered diagrams and the related computation on coefficient of correlation reveal the following results :

(i) that 'the areas of the districts directly affect the numbers of RAMs in various respective districts' hypothesis seems to be positive to only a little extent. The dots in the diagram, although, look positive towards 'bigger the area of the district the higher the number of RAMs in the district and vice-versa'. But the sharp positive relation is hardly observed. The coefficient of correlation value is just 0.1368 meaning

UTTAR PRADESH : REGULATED AGRICULTURAL MARKETS

DISTRIBUTIONAL RELATIONSHIP : DISTRICT VILLAGE-MARKETS

NUMBER OF INHABITED VILLAGES

NUMBER OF MARKETS
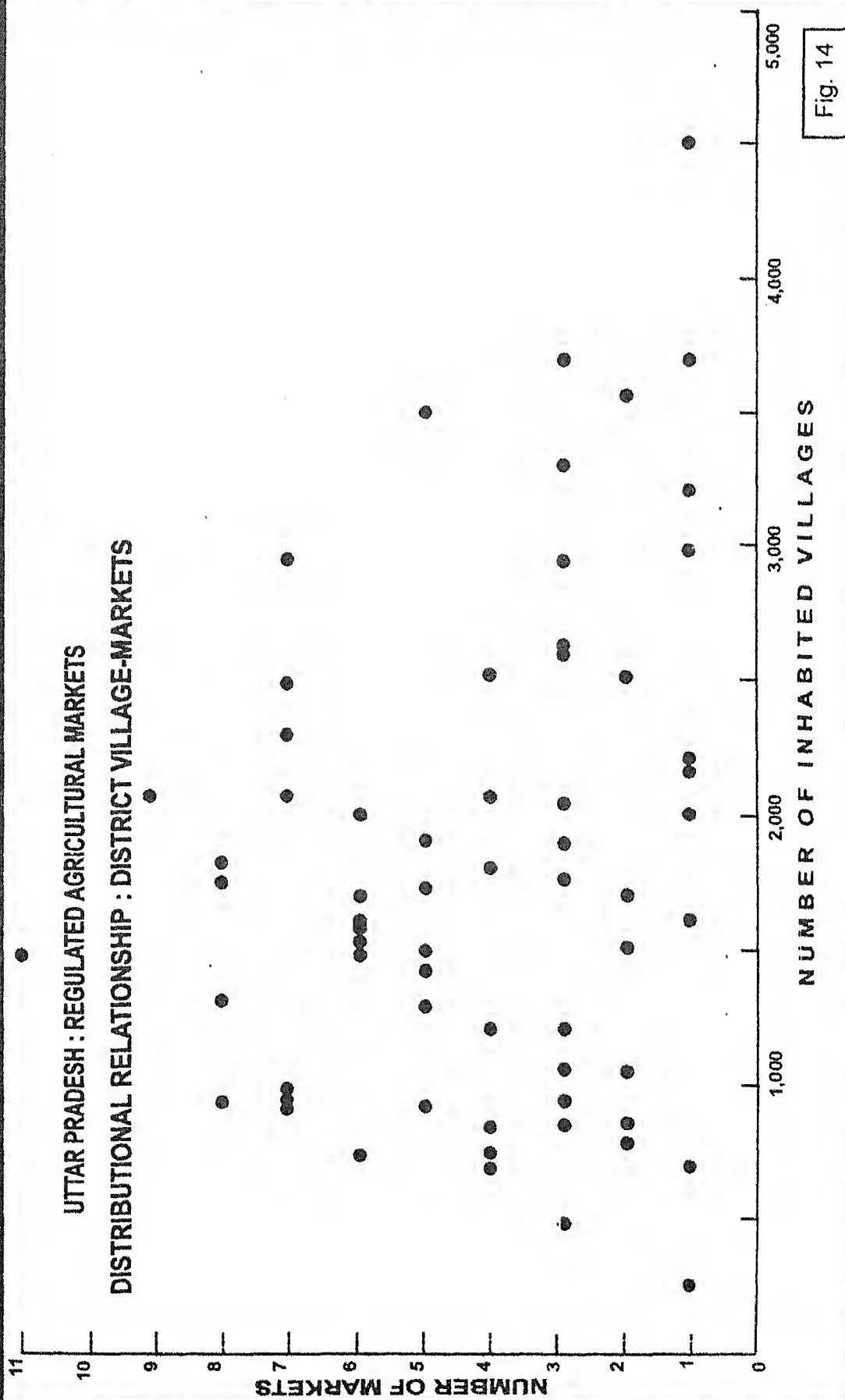
Fig. 14

thereby that the areas of the districts have no particular direct impact on the number of RAMs in various respective districts in the state (Figure 12).

(ii) that 'the population figures of the districts affect directly the numbers of RAMs in various respective districts' looks to be rather positive to some extent as the nature of distribution of dots in the diagram, at a glance supports the hypothesis (Figure 13). Thus, the hypothesis, more the population of the district the higher the number of RAMs in that district, is accepted to certain extent as the coefficient of correlation value supporting the same stands at 0.2955, far better in comparison to (i) above.

(iii) That 'the numbers of inhabited villages in various districts of the state directly affect the respective numbers of RAMs' seems to have, rather, a poor positive relation. The observation of the scattered diagram, obviously, reveals it (Figure 14). The coefficient of correlation value is only 0.1148 which is even less than 0.1368 in (i) above.

(v) That 'the numbers of RAMs per 100 km^2 area in all the districts are directly affected by the extent of road-length per 100 km^2 area in the respective districts.' Hypothesis seems to be more in the positive side in the present case (than in the earlier three cases). The distribution of dots in the scatter diagram also makes it clear (Figure 15). The value of coefficient of correlation, 0.3373, gives a clear signal about the same.

(vi) That 'larger the marketable surplus of the district, higher the number of RAMs in the district,' hypothesis is the most accepted one as compared with the earlier four cases. The scatter diagram (Figure 16) on this variable exhibits that 'the less/the marketable surplus the lower the number of RAMs while more the marketable surplus the

UTTAR PRADESH : REGULATED AGRICULTURAL MARKETS

DISTRIBUTIONAL RELATIONSHIP : DISTRICT ROAD-LENGTH-MARKETS

ROAD LENGTH (KM) PER 100 KM₂

MARKETS PER 100 KM.

Fig 15

142
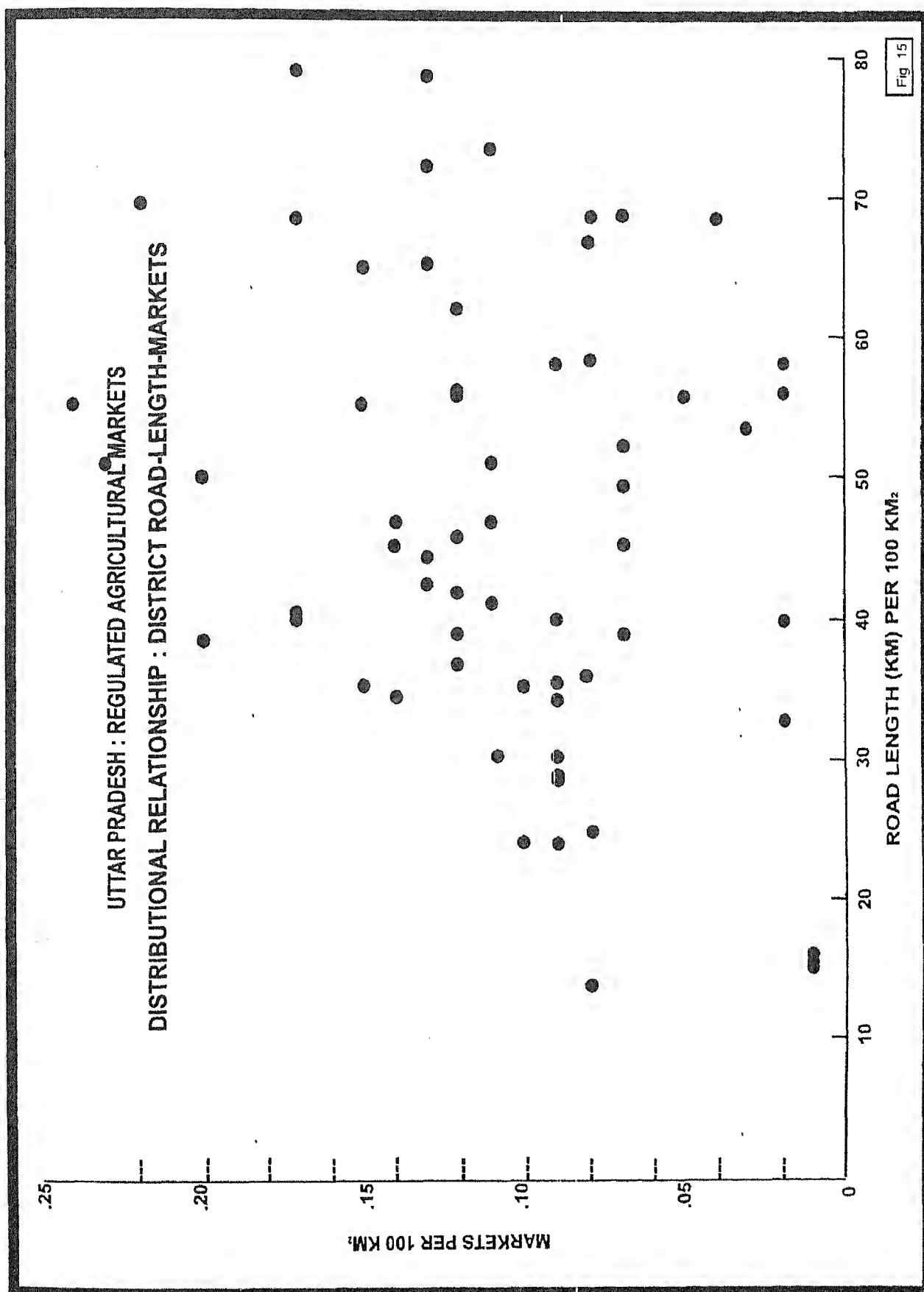
UTTAR PRADESH : REGULATED AGRICULTURAL MARKETS

DISTRIBUTIONAL RELATIONSHIP : DISTRICTMARKETABLE SURPLUS-MARKETS

MARKETABLE SURPLUS ('000 METRIC TONNES)

NUMBER OF MARKETS

Fig. 16
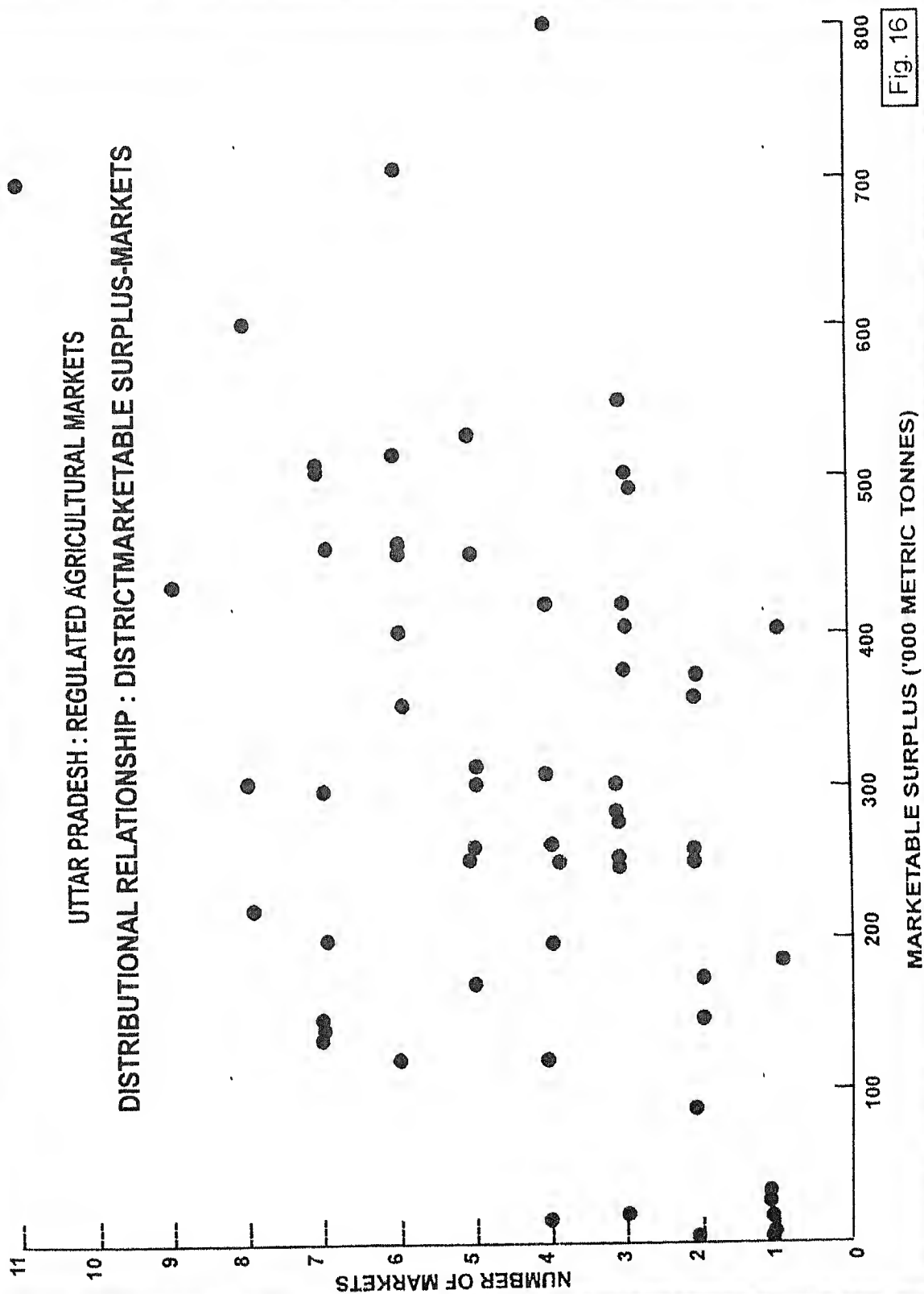
higher the number of RAMs of various respective districts of Uttar Pradesh'. The coefficient of correlation value also stands at 0.4635 supporting it.

But in the strict sense, nowhere, the distribution is controlled by just one single factor. As a matter of fact, a number of attributes are jointly responsible for the present existing situation. Actually, the final picture emerges only due to the cumulative effects of various attributes. Several factors have direct effects to some extent while some others have direct impact to a considerable extent.

5. TYPOLOGY

5.1 INTRODUCTION

In the study of spatial analysis of markets, taxonomical approach, generally, deemed necessary. Due to the numerous characteristics of markets, the study of such an aspect of markets becomes significant. The various characteristics — the segments of the personality — of markets help to understand the real nature of markets. However, the typologies of markets are a theme rarely attended to by the market geographers — whoever has attended to the problem, included only the most generalized perspective in the study — the classification of the markets on the basis of population. Besides, the periodic markets, of course, have been the area of such studies.

5.2 OBJECTIVE

The regulated agricultural markets — RAMs — have hardly been analysed in terms of typologies as the Mandi Parishad itself has prepared just one as A(Ka)Special, A(Ka), B(Kha), and C(Ga). The objective of the present research is to unfold the untold typologies of RAMs while prior to this, in view of their salient features, to develop an appropriate function for the purpose. The typological characteristics also help in determination of centrality and finding out the hierarchical status. Hence, such a study becomes relevant as well as significant too.

5.3 AVAILABLE STUDIES

The typologies of regulated agricultural markets, as has already been mentioned, have been rarely attended to, even Saxena (1992) did not take up this problem in his study centered on Rajasthan. A few studies significant to general typologies of periodic markets are those presented by Dixit (1984, pp. 79-114; 1988, pp. 94-134). The mandies in Punjab have been classified on the basis of quantum of purchase (S.K. Warrior, 1972, p. 78). Murthy (1988, pp. 83-84) while discussing the features of regulated markets has considered some like taluk centres/non-taluk centres; linked by both roadway and railway/linked only with roadway; own yard/non-own yard; with/without godown; and grading/non-grading markets etc.

5.4 METHODOLOGY

Although no statistical techniques have been employed to explore and develop the typologies of the regulated agricultural markets, exhaustive exercises have, certainly, been done to evolve various typologies based on the various significant characteristics of these markets of the state which have come to light through archival research. This has been followed by exhaustive tabulation.

There are a number of significant basic/internal characteristics of markets which have a great bearing on spatial analysis of these institutions. These characteristics also give rise to clear cut features of the personality of the market concerned. As many as a dozen such characteristics are given below which have been employed for classifying the regulated agricultural markets of the state : Nature of site, major modern facilities, sub-yards, periodicity, openings, closing days, nature of settlement, population, road-length, annual fees, volume of crop arrivals, and marketed surplus. A model (Figure 17) has been developed by the author in this connection.

147

TYPOLOGY OF REGULATED AGRICULTURAL MARKETS — A MODEL

Fig. 17
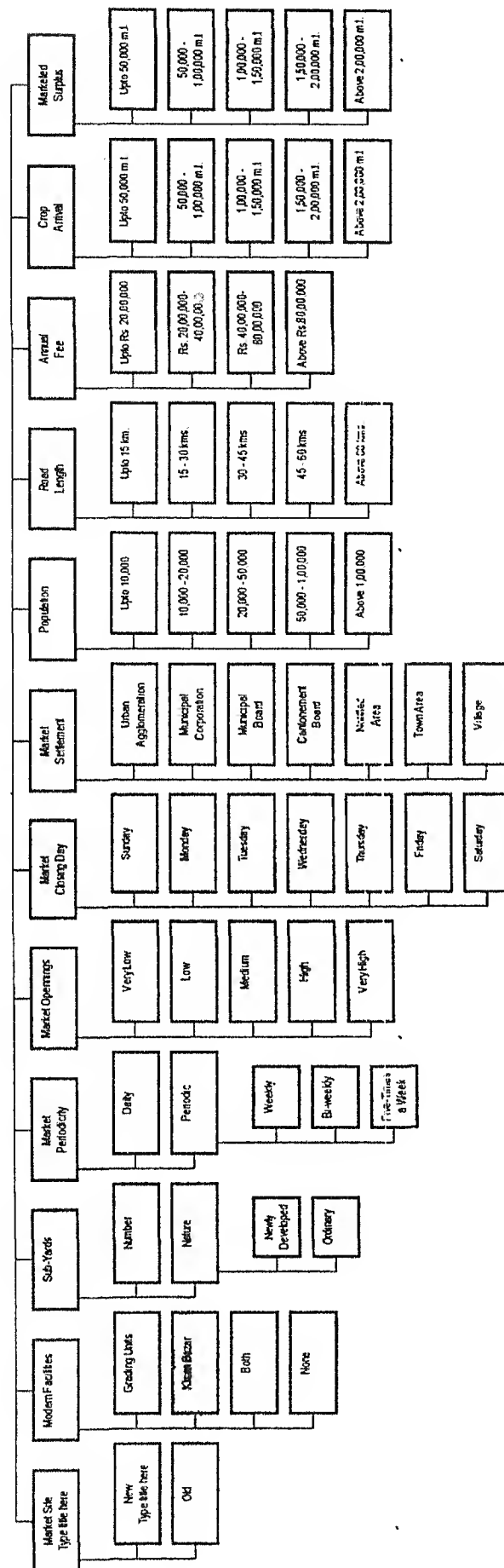
On the basis of the above, the following function has been developed and utilized for presenting typologies (Figure 15) of the markets in reference :

Tram=

$$\text{Tram} = f\left(\frac{Si}{N.Ol}, \frac{Fm}{G.K..}, \frac{Sy}{N.Or}, \frac{Pe}{Da..Nd}, \frac{Op}{Lo.H}, \frac{Cl}{Su.Sa}, \frac{Se}{U..V}, \frac{Po}{Sm..La}, \frac{Rl}{Lo.H}, \frac{Fe}{As.C}, \frac{Ac}{Sm.La}, \frac{Ms}{Sm.La}\right)w$$

here Tram = Typology of regulated agricultural market

f	= Function
Si	= Market Site
N ... Ol	= New ... Old
Fm	= Modern Facilities
G ... K	= Grading ... Kisan Bazar
Sy	= Sub-yards
N ... Or	= New ... Ordinary
Pe	= Periodicity
Da...Nd	= Daily ... Non-daily/periodic
Op	= Market Openings
Lo ... H	= Low ... High
Cl	= Market Closings
Su ... Sa	= Sunday ... Saturday
Se	= Nature of Market Settlement
U ... V	= Urban area ... Village
Po	= Population
Sm...La	= Small ... Large
Rl	= Road-Length
Fe	= Market fee
As ... C	= A Special class... C Class
Ac	= Arrival of Crops
Ms	= Marketed Surplus

5.5 TYPOLOGY

5.5.1 TYPOLOGY BASED ON THE NATURE OF MARKET SITE

The nature of market site affects the development of the market in reference. Where there is a good site for market sittings, more and big transactions also take place as against those markets which have small and poor market place. On the basis on the nature of site, the regulated agricultural markets can be broadly divided into two classes : Those which are held at new/planned premises, and those which are held at the old traditional/undeveloped sites. There are 61.83 per cent such markets with new sites while 38.17 per cent are held on old sites. These major classes have further divided into sub-classes on the basis of the number of new/old premises in various districts of U.P. as shown in Table 5.1.

Table 5.1 : U.P. : Typology of RAMs Based on Nature of Market Site

Site No. Sub-Class	Nature of Site				Total RAMs	
	New		Old			
	No. Of Districts	No. Of RAMs	No. Of Districts	No. Of RAMs	No.	Per cent
(a) 1 - 2 RAM sites	24	38	30	39	77	29.39
(b) 3 - 4	19	67	11	37	104	39.69
(c) 5 - 6	6	33	4.	24	57	21.76
(d) 7 - 8	2	15	-	-	24	9.16
(e) More than 8 RAM sites	1	9	-	-	-	-
Total	52	162 (61.83per cent)	45	100 (38.17per cent)	262	100

I. New Sites

In the entire state, there are 162 RAMs spreading over 52 districts as in 11 districts — Uttarkashi, Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, Almora, Rampur, Firozabad, Siddharthnagar, Deoria, and Mau — there are no RAMs with new market sites. Thus, there are six hill districts, two districts of western U.P., and three districts of eastern U.P. without new market sites. In terms of the number of districts, the

first sub-class is the biggest one while the last is the smallest one. These have 24 and only one districts respectively while there are 19 districts which have 3 to 4 such RAMs each. As far as it is related to the number of RAMs, the second sub-class is the biggest followed by the first, third, fourth, and the fifth.

The 24 districts of the first sub-class are : Saharanpur, Mathura, Etah, Mainpuri, Unnao, Bahraich, Sultanpur, Ballia, Fatehpur, Varanasi, Ghazipur, Mirzapur, Sonbhadra, Lalitpur, Hardwar, Kanpur Nagar, Sitapur, Lucknow, Barabanki, Gonda, Faizabad, Basti, Azamgarh, and Pratapgarh.

There are 19 districts which fall under the second sub-class : Muzaffarnagar, Meerut, Ghaziabad, Agra, Etawah, Kanpur Dehat, Hardoi, Allahabad, Hamirpur, Banda, Bareilly, Pilibhit, Shahjahanpur, Kheri, Dehradun, Raebareli, Maharajganj, Gorakhpur, and Jaunpur.

The third sub-class of six districts comprises Bullandshahr, Bijnor, Jhansi, Aligarh, Farrukhabad, and Jalaun.

Moradabad district has 7 while Badaun has 8 such markets.

II. Old Sites

Under this, there are 3 sub-classes only meaning thereby that the markets which are held still at old conventional/traditional premises do not make the fourth/fifth sub-classes which are characterized by the districts with more than six RAMs each. The first sub-class is the largest one followed by the second, and the third. There are 30 districts in the first, while 11 and 4 in the following sub-classes respectively. In the context of number of RAMs these three sub-classes have 39, 37 and 24 markets respectively. Thus, there are 100 such markets which are held at old premises. In this class, there are no sub-classes like fourth and fifth. In all, these 100 markets are held in 45 districts.

The districts which have old site RAMs — Saharanpur, Bullandshahr, Sitapur, and Gonda have as many as 6 markets each where no new sites/yards have been constructed. And that the regulated markets are still held at old sites. There are 11 districts which have at least 3 to 4 old site RAMs. Muzaffarnagar, Rampur, Etah, Kheri, Raebareli, Fatehpur, and Hamirpur have 3 each while Agra, Ferozabad, Bahraich, and Siddharthnagar have 4 each such markets. There are as many as 30 districts which fall under the first sub-class having 1 or 2 markets with old sites. However, there are 18 districts which absolutely have no RAMs with old premises, i.e., all of the RAMs of these districts are held only at the newly developed yards. The districts are Nainital, Ghaziabad, Moradabad, Badaun, Bareilly, Pilibhit, Aligarh, Farrukhabad, Kanpur Nagar, Sultanpur, Basti, Gorakhpur, Jaunpur, Azamgarh, Pratapgarh, Mirzapur, Sonbhadra, and Jalaun. Out of these, Nainital is located in the hill area, 6 districts in the western U.P. region, 2 districts in the central U.P. region, 8 in the eastern U.P. region, while only one — Jalaun — in the Bundelkhand region.

5.5.2 TYPOLOGY BASED ON MAJOR MODERN FACILITIES

A market with some special/modern facilities is certainly a big and better as against those which have no such facilities. The availability of various facilities attract both the market functionaries — the sellers, and the buyers. The present classification has been done in view of the two major modern facilities — availability of grading units, and the existence of the Kisan Bazar. The markets have been marked where one or the other such facility is there. There are certain markets which have both the facilities against some which do not have any facility at all. There are 19.84 percent of RAMs which have the grading units, 25.95 per cent of the RAMs have the Kisan Bazar facility but there are only 11.83 per cent of RAMs which have both the facilities together

while as high as 66.03 per cent markets have no facilities at all in term of these modern units. The details have been given in Table 5.2.

Table 5.2 : U.P. : Typology of RAMs Based on Major Modern Facilities

Facility No.	Major Modern Facility							
Sub-class	Grading Units		Kisan Bazar		Both Facilities		No Facilities	
RAMs	No. Of Distts.	No. Of RAMs	No. Of Distts.	No. Of RAMs	No. Of Distts.	No. Of RAMs	No. Of Distts.	No. Of RAMs
(a) 1 - 2	21	28	26	32	14	17	30	43
(b) 3 - 4	3	10	8	29	2	7	15	54
(c) 5 - 6	1	5	-	-	-	-	11	58
(d) 7 - 8	-	-	1	7	1	7	1	8
(e) More than 8	1	9	-	-	-	-	1	10
Total	26	52 (19.84%)	35	68 (25.95%)	31	31 (11.83%)	58	173 (66.03%)

These classes have been further divided into smaller classes on the basis of the facility numbers in each district. The first sub-class shows the districts which have at least one or two such markets. The second sub-class is on 3-4 such markets each while the third, fourth and the fifth sub-classes follow the order respectively. The details of various sub-classes are given below :

I. Grading Units

This facility is available in 52 of the RAMs of 26 districts of U.P. There are 21 districts which have either one or two RAMs each with such a facility. The total number of the markets of these districts is 28. This is the highest number which falls under any sub-class under grading units. The second sub-class has 10 such RAMs followed by the fifth, and the third sub-classes which have 9 and 5 markets respectively. There is such one district, Nainital, of which all the nine markets are equipped with the grading facilities. Out of 6 RAMs of Jhansi district, 5

have this facility. Jalaun district has four; and Muzaffarnagar, and Banda districts have three each such markets.

The 21 districts providing this facility are : Saharanpur, Ghaziabad, Bullandshahr, Badaun, Bareilly, Pilibhit, Shahjahanpur, Mainpuri, Sitapur, Raebareli, Bahraich, Gorakhpur, Maharajganj, and Sonbhadra have one each while Moradabad, Aligarh, Mathura, Kheri, Sultanpur, Lalitpur, and Hamirpur districts have two such markets each.

In all there are 26 districts providing this facility to their RAMs in U.P. The grading facility is completely absent in the entire hill region (excepting, of course, Nainital District), of the state. As against this, all the five districts of the entire Bundelkhand region — have grading facilities to a considerable extent except Hamirpur district where out of 7 markets only two markets have this facilities.

II. Kisan Bazar

There is just one district, Nainital, which has 7 of its 9 RAMs equipped with Kisan Bazar facility. There are 8 districts — Bijnor, Badaun, and Aligarh have three each such markets, while Moradabad, Kheri, Hardoi, Jhansi, and Jalaun districts have four such markets each. Thus, there are 29 markets in this second sub-class. In all, there are 26 districts providing such a facility under the first sub-class which has as high as 32 such markets in all.

A total of 35 districts of U.P. have Kisan Bazars while 28 districts are deprived of this facility. As many as 68 RAMs have Kisan Bazars in U.P. against 52 RAMs which have the grading facility. The 26 districts which have 1 - 2 markets each with Kisan Bazar are : Hardwar, Meerut, Ghaziabad, Bullandshahr, Bareilly, Mathura, Etawah, Farrukhabad, Kanpur Dehat, Kanpur Nagar, Lucknow, Bahraich, Gonda, Jaunpur, Pratapgarh, Allahabad, Varanasi, Sonbhadra; Lalitpur, and Banda (have one market each) while Dehradun, Saharanpur, Muzaffarnagar,

Shahjahanpur, Maharajganj, and Hamirpur(have 2 such markets each). The entire hill region of U.P. (excepting Dehradun and Nainital districts) have absolutely no Kisan Bazar facility. In Dehradun District, out of 4 RAMs 2 have such facility.

III. Both facilities :

There are 17 districts which have both facilities of grading unit and Kisan Bazar at their RAMs. These 17 districts have 31 such markets. Out of these, 14 districts, falling under the first sub-class of 1-2 such markets each have 17 markets, 2 districts belonging to the second sub-class have 7, while one district, Nainital, also has 7 such RAMs. In Jhansi district 4, and in Jalaun 3 markets have both of these facilities. There are as high as 46 districts which do not have both facilities together. The 14 districts with 1 or 2 RAMs of both facilities are : Saharanpur, Ghaziabad, Bullandshahr, Badaun, Bareilly, Shahjahanpur, Mathura, Kheri, Bahraich, Sonbhadra, and Lalitpur have one each while Muzaffarnagar, Moradabad, and Hamirpur have 2 such RAMs each.

There are absolutely no markets in the hill region (excepting Nainital district) which have both the facilties together present for the farmers. It has been observed that unlike the hill region, Bundelkhand region has a very comfortable position in this connection as out of 5 districts of this region, every district has this facility to some extent. Against 2 markets of Lalitpur district, Kisan Bazar exists at one, in case of Jhansi's 6 markets it is present at 4, in Jalaun district out of 7 markets it is available at 4 again, but in Hamirpur and Banda districts there are only 2 and 1 Kisan Bazars against 7 and 5 RAMs of these districts respectively.

IV. RAMs without any Modern Facility :

There are as many as 30 districts which have 1-2 RAMs without any modern facility like grading and/or Kisan Bazar. There are 43 RAMs located in these districts. Fifteen districts have 3-4 markets each without any facilities. The number of such markets in U.P. is 54. Eleven districts — Budaun, Etah, Etawah, Farrukhabad, Kanpur Dehat, Bahraich, Fatehpur, and Hamirpur have 5 RAMs each without the modern facilities while Saharanpur, Sitapur, and Gonda have 6 RAMs each without any such facility. It is noted that out of 8 RAMs of Agra, all the 8 have no modern facilities as also out of 11 RAMs of Bullandshahr district, 10 RAMs have absolutely no facilities. In all from the first sub-class to the fifth one, there are 58 such districts while 173 such markets are located in these districts.

The above analysis shows that only in 31 of the 262 RAMs of U.P., there are both the facilities together. The situation is very pity. Even out of 262 RAMs, only 68 have the Kisan Bazars while still less, only 52 have the grading units. This clearly shows that there is an ample need and scope for development as the state is characterized by large agricultural production and a large number of RAMs too. The absence of modern facilities only says about the absence of enough and proper efforts on the part of the government.

5.5.3 TYPOLOGY BASED ON SUB-YARDS

The number and nature of sub-yards attached with the main regulated agricultural markets has a great significance in the development of markets. The market yards with large number of subsidiary market yards and/or good quality sub-yards are certainly better and big rather than those which do not have such sub-yards. There are 381 sub-yards attached with 262 main/primary markets of the state. Many of the sub-yards have new sites also. Therefore, the number and nature of sub-yards is also an important criterion of study under typology of RAMs.

In all, there are 36 districts in U.P. which have atleast one such yard with new site. There are 67 RAMs in all with new sub-yards. As against these figures, 56 districts have 3 - 4 RAMs without any new market sites. The percentages of sub-yards with/without new site are 17.58, and 82.42 respectively. These two classes — sub-yards with new sites, and sub-yards without any new sites — have further been divided into smaller classes, especially, in the case of sub-yards without new yards. There happen to be several small classes. Table 5.3 exhibits the various details of this perspective.

Table 5.3 : U.P. : Typology of RAMs Based on Sub-yards

Sub-yard No.						
			Sub-yard — Sites			
Sub-class	**New Sites**		**Ordinary Sites**		**Total Sub Yards**	
	No. Of Districts	No. of RAMs	No. Of Districts	No. of RAMs	No. Of Distts.	No. Of RAMs	Percentage of RAMs
(a) 1 - 2	29	43	13	21	8	12	3.15
(b) 3 - 4	6	19	10	37	7	24	6.29
(c) 5 - 6	1	5	15	83	16	86	23.11
(d) 7 - 8	-	-	7	51	11	82	21.52
(e) 9 - 10	-	-	7	67	6	56	14.69
(f) 11-12	-	-	2	22	7	81	21.28
(g) 13-14	-	-	1	14	-	-	-
(h) More than 14	-	-	1	19	2	38	9.96
Total	36	67 (17.58)	56	314 (82.42)	57	381	100

I. Sub-yards with New Sites

It has already been mentioned that the RAMs with new sub-yards are 67 in number. The districts where these are found are divided into three sub-classes : those having 1-2 sub-yards each, those having 3-4 sub-yards, and those with 5-6 such yards each. The first sub-class is the largest one followed by the second and further, the third. In case of number of districts included, there are sharp differences between these

figures too. As when the first stands at 29, the second at 6, and the third at 1. There are 43 sub-yards with new sites located in the said 29 districts while 19 sub-yards are found in the second sub-class followed by 5 sub-yards in the third one. There are no other sub-classes under this — the new site class. The inclusion of districts in to these three sub-classes are as follows :

The 29 districts are Dehradun, Hardwar, Meerut, Ghaziabad, Mathura, Ferozabad, Mainpuri, Raebareli, Sultanpur, Gorakhpur, Maharajganj, Ballia, Varanasi, Sonbhadra, Lalitpur — 15 districts have one new sub-yard each while Nainital, Saharanpur, Bijnor, Moradabad, Rampur, Shahjahanpur, Aligarh, Etah, Kheri, Hardoi, Sitapur, Fatehpur, Jalaun, Hamirpur — 14 districts have two new sub-yards each. While the first part includes one district of hill region, one district of central U.P., one district of Bundelkhand region, 6 districts of the western U.P., 6 districts of eastern U.P.; the second part consists of one district of hill region, 7 districts of western U.P., 3 districts of central U.P., one district of eastern U.P. and 2 districts of the Bundelkhand region.

There are 6 districts included in the second sub-class : Farrukhabad, Deoria, Allahabad, Jhansi, Ghazipur, have 3 sub-yards each, while it is also important to mention that only Etawah has four such sub-yards in entire U.P. This sub-class includes 2 districts of central U.P., 3 of eastern U.P. and one of the Bundelkhand region.

Only one district, Kanpur Dehat, located in central U.P. has 6 main or primary markets with which 11 sub-yards are attached out of which 5 have new sites. This number stands the highest in the entire state. This is followed by Etawah falling under the second sub-class above

II. Sub-yards with Ordinary or Old Sites

Although the state government is making efforts to get constructed the new sites of the sub-yards also as mentioned above, due to the high

number of yards involving heavy cost in the construction, only about 1/6th of the sub-yards have been constructed while about 5/6th sub-yards still hold their meetings at the old sites only. There are, thus, four times the number of old sub-yards in comparison to the new sub-yards. Out of a total of 381, as many as 314 sub-yards have old premises only. All these sub-yards, spread over 56 districts. All the districts which have traditional sites have been categorised into 8 sub-classes as under :   (a) the districts which have 1-2 sub-yards each, (b) the districts which have 3-4 sub-yards each, (c) the districts with 5-6 sub-yards each, (d) the districts with 7-8 sub-yards each, (e) the districts with 9-10 sub-yards each, (f) the districts with 11-12 sub-yards each, (g) the districts with 13-14 sub-yards each, and (h) the districts with more than 14 sub-yards each.

(a) The first sub-class has the second largest number of districts amongst all. It follows the third sub-class which is the largest one in this context. The first sub-class has 13 districts with 1-2 old site — sub-yards each. Pauri Garhwal, Firozabad, Gonda, Mirzapur, and Sonbhadra — these 5 districts have one such sub-yard each; while Dehradun, Ghaziabad, Rampur, Kanpur Nagar, Basti, Lalitpur, Jhansi, and Jalaun — these 8 districts have two old sub-yards each. In all there are 31 ordinary sub-yards.

(b) The second sub-class has 10 districts which have 3-4 sub-yards each. While Etawah, Sitapur, Bahraich — 3 districts — have 3 ordinary yards each; Saharanpur, Meerut, Moradabad, Mainpuri, Unnao, Deoria, Fatehpur — 7 districts — have 4 such sub-yards. This sub-class stands third as regards the number of districts in the order following the third, and the first sub-classes. This has 37 ordinary sub-yards in all.

(c) The third sub-class, as has already been mentioned, has the largest number of districts falling under the districts with 5-6 ordinary sub-yards each. There are 15 districts under this : Budaun, Barabanki,

Gorakhpur, Azamgarh, Ballia, Pratapgarh, and Ghazipur have 5 ordinary sub-yards each while Bijnor, Shahjahanpur, Kanpur Dehat, Hardoi, Lucknow, Siddharthnagar, Maharajganj, and Banda have 6 ordinary sub-yards each. This sub-class also has the highest number of — 83 — ordinary sub-yards amongst all the 8 sub-classes.

(d) While as regards the number of districts, which have 7-8 ordinary sub-yards each, this sub-class stands fourth, with respect to the number of sub-yards, it ranks third. There are 7 such districts with 51 such sub-yards. The 7 districts are : Muzaffarnagar, Bullandshahr, Aligarh, Faizabad, and Hamirpur with 7 such sub-yards each, while 2 districts — Pilibhit, and Mathura — with 8 ordinary sub-yards each.

(e) The fifth sub-class has the districts with 9-10 ordinary sub-yards each. There are 7 districts under this sub-class : Hardwar, Farrukhabad, and Jaunpur have 9 such sub-yards each, while Agra, Etah, Kheri, and Varanasi have 10 such sub-yards each. Thus there are 67 such sub-yards in all in this sub-class. This number is the second highest number following the third sub-class which has as high as 83 sub-yards.

(f) This sub-class has only two districts which have 11-12 ordinary sub-yards each. These districts are — Bareilly, and Raebareli. However, both of these have 11 such markets each. Hence, 22 ordinary sub-yards belong to this sub-class. While in case of the number of districts, this is the second smallest sub-class — following the last two sub-classes (with one each district); in case of number of ordinary sub-yards, it is the third one following the last two sub-classes.

(g) Only one district belongs to the sub-class, 13-14 ordinary sub-yards district. This is the Allahabad district which has 14 such sub-yards. Thus, this sub-class includes only 14 sub-yards. In case of number of

RAMs, it is the smallest sub-class while in case of number of districts too, it is the smallest one.

(h) This sub-class of the ordinary sub-yards also has just one district — Nainital district — which has 19 such sub-yards. Thus, this sub-class also has 19 ordinary sub-yards. In case of number of districts, this sub-class is the last and the smallest (along with the earlier sub-class) while in case of the number of RAMs, this is the second smallest following the earlier one.

III. Total Sub-yards

This part includes both the new and the ordinary - site sub-yards. In this case, also, 8 sub-classes have been done of the districts with number of sub-yards. These sub-classes are 1-2, 3-4, 5-6, 7-8, 9-10,11-12, 13-14, and more than 14 sub-yards each. There are 57 districts in all spreading over 7 sub-classes while 381 sub-yards are there spreading over 7 sub-classes i.e., excepting the last but 1 class. This classification, thus, has included the entire picture of these institutions.

(a) In the first sub-class, there are 8 districts — while 4 districts : Pauri Garhwal, Gonda, Sultanpur, and Mirzapur have only one sub-yard each; Firozabad, Kanpur Nagar, Basti, Sonbhadra — another set of 4 districts — also has 2 sub-yards each. Thus, in all, there are 12 sub-yards under this. This is the third in order of number of districts while only the last one in order of number of sub-yards.

(b) The second sub-class has 7 districts while 24 total sub-yards are included in it. The districts which have 3-4 sub-yards each are : Dehradun, Ghaziabad, Bahraich, and Lalitpur have 3 sub-yards each while Rampur, Unnao, and Jalaun have 4 sub-yards each.

(c) There are 16 districts under this sub-class. These districts have 5-6 sub-yards each. The districts are : Meerut, Budaun, Mainpuri, Sitapur, Barabanki, Gorakhpur, Azampur, Ballia, Pratapgarh, and Jhansi (have 5 sub-yards each) while Saharanpur, Moradabad, Lucknow, Siddharthnagar, Maharajganj, and Banda (have 6 sub-yards each). This is the sub-class which has the largest number of sub-yards as well as the largest number of districts too.

(d) The fourth sub-class has the districts which have 7-8 sub-yards each. The number of such districts is 11. These districts are : Muzaffarnagar. Bullandshahr, Etawah, Faizabad, Maharajganj, and Deoria have 7 sub-yards each; while the districts of Bijnor, Pilibhit, Shahjahanpur, Hardoi, and Ghazipur have 8 sub-yards each. Thus, there are 82 sub-yards in this sub-class. As regards the number of sub-yards, it stands second while as regards the number of districts, it stands second again.

(e) This sub-class includes the districts with 9-10 sub-yards each. This is the fifth sub-class. However, there are 6 districts in this sub-class namely Aligarh, Mathura, Jaunpur, and Hamirpur with 9 sub-yards each while 2 districts i.e. Hardwar, and Agra have 10 sub-yards each. Hence, a total of 56 sub-yards are included in this sub-class. This sub-class stands the fourth largest sub-class in case of number of sub-yards while fifth in case of number of districts.

(f) Eleven-twelve sub-yards are included in this sub-class. It has 7 districts — only 3 districts Bareilly, Kanpur Dehat, and Varanasi have 11 sub-yards each, but 4 districts — Etah, Farrukhabad, Kheri, and Raebareli, have 12 such sub-yards each. This sub-class stands third in case of number of sub-yards while fourth in case of number of districts.

(g) The seventh sub-class, however, has no districts and hence, there are no markets also under it.

(h) This sub-class which includes the districts which have more than sub-yards each, is the last one. There are only 2 such cases — the Allahabad case, and the case of Nainital district. While the case of Allahabad has 17 sub-yards, the district of Nainital has 21 sub-yards and hence, there are 38 sub-yards in all under this sub-class.

However, there are some districts which have no sub-yards at all. These districts are some of the hill districts such as Uttarkashi, Tehri Garhwal, Chamoli, Pithoragarh, Almora — five districts, while in addition, one district of eastern U.P., Mau, also does not have any sub-yards. Further, Sultanpur is the only district in U.P. which has just one sub-yard and that too is of new site hence this district has no ordinary sub-yards but only one, the new one.

5.5.4 TYPOLOGY BASED ON PERIODICITY

Periodicity of markets, generally, is taken into consideration in context of week. Hence, when it is said that a particular market has 'twice' the periodicity, it means the market in reference has its meetings twice a week. In the present case, there are two major types — the daily RAMs and the periodic RAMs — other than the daily ones. However, the number of non-daily RAMs is only 7 out of 259 RAMs of U.P. (as three markets of Tehri Garhwal, Uttarkashi, and Chamoli have not started functioning as yet and hence not included in the total. The percentages for the daily RAMs, and the other ones are 97.30 and 2.70 respectively.

This internal characteristics of markets is also quite important aspect. It is obvious that higher the periodicity of the market, higher the status of the market and bigger the size of the market too. Thus, there is no doubt that periodicity of a market adds significance to the personality of the market in reference.

In U.P., regulated agricultural markets are, generally, daily markets which meet 6 times a week. However, there are some, really only

some, which are the periodic/non-daily markets. In these markets, the openings/sittings/meetings vary from once to five times a week. It has already been mentioned that the markets which meet six times a week are known as the daily markets. In the present case also 2 major types of classes have been presented: the daily RAMs and the periodic/non-daily RAMS. The details of the daily RAMs have been shown in Table 5.4. The periodic/non-daily markets are just 7— one market, meets once, one market holds its meetings five times, while 5 markets have their meetings twice a week. In the case of daily markets, the sub-classes have been enhanced upto 11.

I. Periodic RAMs

Once a Week or Weekly RAMs

As regards these RAMs, in entire state of U.P., there is just one market in Maharajganj district named Garaura which meets just on one day of the week — Tuesday. On all the other 6 days it remains closed. As far as it is concerned with the total weekly openings, the weekly market in this case has only one opening.

Twice a Week or Bi-weekly RAMs

Unlike the above, there are 3 districts — Unnao, Lucknow, and Jalaun which have one each twice a week market. However, Sitapur district has 2 such markets. Thus, in all, there are only 5 such markets located only in 4 districts of the state. In Sitapur district, these markets are located in Hargaon, which meets on every Wednesday and Saturday; and Siddhauli which meets on every Tuesday and Saturday. In Unnao district, the bi- weekly market is held at Purwa. This market also meets on every Tuesday and Saturday. In the district of Lucknow, the Banthara RAM also meets twice only on Sundays and Wednesdays. In Lucknow division, therefore, there are 4 bi-weekly markets. Besides, in

Bundellkhand region, in Jalaun districts, one market i.e. Kadaura remains open on Mondays and Fridays. Thus, this also is a bi-weekly market. In all, there are 10 openings of these 5 bi-weekly RAMs per week.

Five Times a Week RAMs

Unlike the above, but just like the weekly market, there is just one market which meets five times a week. This is located in Faizabad district. The Tanda market of this district meets on all the days of the week excepting on Monday, and Friday. Thus, there are just 5 openings/meetings of this market in a week in all.

II. Daily RAMs

In all, there are 262 RAMs in the 63 districts of U.P. As far as it is related to periodicity, it has already been mentioned that 7 markets are the non-daily markets. Besides, although Uttarkashi, Tehri Garhwal, and Chamoli — the three hill districts of U.P. — have one each RAM but all these RAMs have not started functioning under the regulation. Hence, 10 of the RAMs, have not been included in the present analysis as it is centered on daily RAMs only. Thus, only 262-10 = 252 are included in the present analysis.

It must be mentioned that the 'openings of markets per week' has also been included in the present analysis. The various details about the districts where the daily markets meet, the number of such markets as also the total number of openings are demonstrated through Table 5.4.

Table 5.4 : U.P. : Typology of RAMs Based on Daily Periodicity

Market No. Districts /Classes	No. of Districts	No. of RAMs	No. of Openings	Percentage of RAMs
I. One RAMs districts	8	8	48	3.17
II. Two market-districts	8	16	96	6.34
III. Three market-districts	11	33	198	13.10
IV. Four market-districts	7	28	168	11.11
V. Five market-districts	8	40	240	15.87
VI. Six market-districts	8	48	288	19.06
VII. Seven market-districts	5	35	210	13.89
VIII. Eight market-districts	3	24	144	9.53
IX. Nine market-districts	1	9	54	3.57
X. Ten market-districts	-	-	-	-
XI. Eleven market-districts	1	11	66	4.36
Total	60*	252**	1512***	100

* Three hill districts — Uttarkashi, Tehri Garhwal, and Chamoli have not been included as these markets have no openings.

** Seven non-daily markets, and three hill markets have not been included.

*** The seven non-daily markets of the plain region have a total openings of 6 per week which have not been included besides the three hill district-markets which have no openings.

(i) There are 8 districts — Pauri Garhwal, Pithoragarh, Almora, Kanpur Nagar, Lucknow, Basti, Agra, and Pratapgarh — which have only one daily market each. Of these, three are the hill districts; Kanpur Nagar, and Lucknow are in central U.P.; and Basti, Azamgarh, and Pratapgarh are in the eastern U.P. In addition to these hill districts, the other districts except Lucknow have only one RAM each and that all of them are daily RAMs. Only Lucknow district has two RAMS out of which is Lucknow itself (Banthara is a bi-weekly RAM). In all the 8 daily markets, the total openings in a week, therefore, come to 48.

(ii) Again, there are 8 districts which have 2 daily RAMs each. These districts are — Unnao, Faizabad, Sultanpur, Deoria, Mau, Mirzapur, Sonbhadra, and Lalitpur. Excepting Faizabad, and Unnao, all the districts have only two markets each, and both of these are daily RAMs, however, Unnao, and Faizabad districts have three RAMs each out of which one each is the non-daily RAM (in case of Unnao it is a bi-weekly market while in case of Faizabad it is a five-times a week market). The total number of daily markets, thus, is 16 while the total openings of the week in these markets come to 96.

(iii)As many as, 11 districts have three daily RAMS each. These districts are Hardwar, Rampur, Bareilly, Pilibhit, Mathura, Mainpuri, Barabanki, Gorakhpur, Maharajganj, Jaunpur, and Varanasi. All of these districts except Maharajganj, have only three markets each and that all these are daily markets. Maharajganj has 4 markets out of which 1 is a weekly market. A total of 33 daily RAMs are located in these districts. The total openings per week come to 198.

(iv)The districts which have 4 daily RAMs each are 7 in number. These districts are : Dehradun, Ghaziabad, Saharanpur, Firozabad,

Siddharthnagar, Ballia, and Ghazipur. These districts have only 4 RAMs each and that all of these are daily RAMs out of these districts, the first is located in the hill region, the next 3 are in the western U.P., while the last three are located in the eastern U.P. The total number of these daily markets is 28 while the total openings of these are 168 per week.

(v) There are 8 districts which have 5 daily RAMs each. These districts are Meerut, Etah, Hardoi, Sitapur, Raebareli, Fatehpur, Allahabad, and Banda. Among these, only Sitapur, actually, has 7 RAMs out of which two are the bi-weekly RAMs. All the rest of the districts have only 5 markets each and all these are the daily RAMs. The total number of these markets is 40. While the total number of openings per week comes to 240.

(vi) The number of districts which have 6 daily RAMs each is 8 again. These districts are : Aligarh, Farrukhabad, Etawah, Kanpur Dehat, Kheri, Bahraich, Jhansi, and Jalaun. Out of these only Jalaun, actually, has 7 markets. Out of which only one is a bi-weekly RAMs. Thus, all the rest districts have 6 RAMs each and that all of these are the daily RAMs. The total number of markets in this class is 48. The total number of openings of all these markets comes to 288 per week.

(vii) The 7 daily RAM districts are only 5 in number : Muzaffarnagar, Bijnor, Moradabad, Gonda, and Hamirpur. All these districts have only 7 RAMs each as also that all of these are the daily RAMs. The total number of RAMs in this class is 35 while the total number of weekly openings comes to 210.

(viii) Eight daily RAM districts are still smaller in number. They are three only — Saharanpur, Budaun, and Agra. All these districts have only 8 RAMs each, and that all of these are the daily RAMs. These districts are located in the western U.P. region. The total number of

the RAMs is 24 while the total openings of the markets per week are 144.

(ix) The nine daily RAM district — the smallest in number — just one only — is the Nainital district in the hill region. The total number of markets under this, therefore, is 9 only, while the total number of weekly openings of these markets are 54.

(x) However, there are no districts which have 10 daily RAMs each.

(xi) There is just one district again which has as many as 11 daily RAMs. It is the Bullandshahr district. It has all of its markets as daily markets hence under this reference, there are 11 markets, while the total number of weekly openings is 66.

5.5.5 TYPOLOGY BASED ON MARKET OPENINGS

The total market openings of the week in a district also is a characteristic in itself. An economically poor district would have less market openings against those which have good production and marketable surplus of crops. It must be noted here that the three districts of Uttarkashi, Tehri Garhwal, and Chamoli have not been included in this analysis as there are no openings of the markets under the regulation in these districts.

The state can be classified into five types which have weekly openings upto 12, 12-24, 24-36, 36-48, and more than 48. These five classes are very low openings, low number of openings, medium number of openings, high number of openings, and very high number of openings. The medium class has the highest number of RAMs, 84. The respective percentage of these are 8.80, 25.38, 32.30, 25.38 and 8.14. The details of these classes have been demonstrated through Figure 18 and Table 5.5.

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
TYPOLOGY BASED ON MARKET OPENINGS

Fig. 18
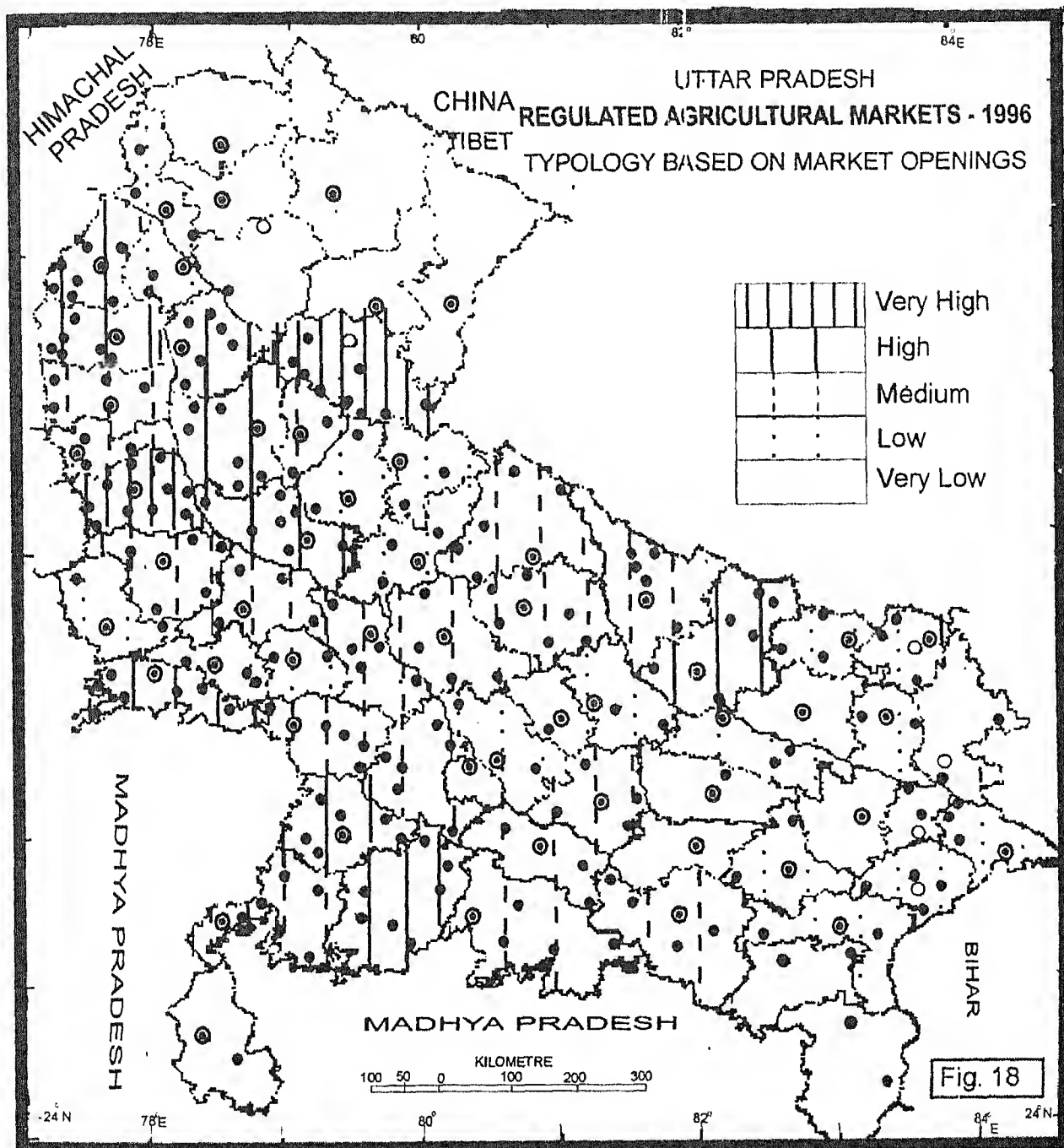
Table 5.5 : U.P. : Typology of RAMs Based on Market Openings

Class	No. of Openings	No. Of Districts	No. Of RAMs	Percentage of RAMs
I. Very low	Upto 12	14	21	8.80
II. Low	12-24	20	66	25.38
III. Medium	24-36	15	84	32.30
IV. High	36-48	9	60	25.38
V. Very high	More than 48	2	20	8.14
Total		60	257	100

I. Very Low Openings

This class has only upto 12 weekly openings. There are 14 districts which fall under this class namely, Pauri Garhwal, Pithoragarh, Almora, Kanpur Nagar, Lucknow, Basti, Azamgarh, Pratapgarh, Sultanpur, Deoria, Mau, Mirzapur, Sonbhadra, and Lalitpur. Lucknow district has a total of 8 openings while the last 6 districts have 12 each and the rest 7 districts have 6 openings each. All of these districts have, generally, 1 or 2 daily RAMs hence, the openings are also low in number — rather very low.

II. Low Openings

Under this class, the low openings — more than 12, and upto 24 are considered. When observed the data, there happened to be the highest number of districts in the class — as high as 20. These districts are : Dehradun, Hardwar, Ghaziabad, Rampur, Bareilly, Pilibhit, Shahjahanpur, Mathura, Firozabad, Mainpuri, Unnao, Barabanki, Faizabad, Siddarthnagar, Gorakhpur, Maharajganj, Jaunpur, Ballia, Varanasi, and Ghazipur. All of these districts have generally 3 or 4 daily markets.

III. Medium Openings

The range of this class is beyond 24 upto 36 openings per week. In this class, there are 15 districts as under : Meerut, Aligarh, Etah, Etawah, Farrukhabad, Kanpur Dehat, Kheri, Hardoi, Sitapur, Raebareli, Bahraich, Fatehpur, Allahabad, Jhansi, and Banda. Out of these Sitapur has 7 markets, of which two are the bi-weekly markets and the rest are the daily ones. The other districts have 5 or 6 daily markets each.

IV. High Openings

This class varies from beyond 36 upto 48 openings per week. Under this class, there are 9 districts namely, Saharanpur, Muzaffarnagar, Bijnor, Moradabad , Budaun , Agra, Gonda, Jalaun, and Hamirpur. All of these districts have either 7 or 8 daily RAMs each . Budaun, Saharanpur and Agra have 8 each RAMs.

(V) Very High Openings

This is the last sub-class of the weekly openings of the RAMs in the state. It includes more than 48 openings per week. Under this, there are only 2 districts — Nainital with 54 openings, and Bullandshahr with 66 openings. These districts have 9 and 11 daily RAMs respectively.

STATISTICAL TESTING OF DIFFERENCE IN THE NUMBER OF WEEKLY OPENINGS

After analysing the typology based on the market openings per week of various districts of U.P., it may be interesting as also useful to analyse statistically the difference in the number of market openings per week of these districts. The attempt, therefore, aims at answering the question : Is there any significant difference between the market openings of various districts of the state ? It is important to mention that in this case 3 districts i.e., Uttarkashi, Tehri Garhwal, and Chamoli have not been included as there are no openings in these markets

under market regulation. Hence, there are only 60 districts included in the analysis.

Similar to the problem solved in case of distribution of number of RAMs in various districts, in the present case too, the null hypothesis that 'there is no significant difference between the numbers of market openings of various districts of U.P.' has been tested.

The numerical distribution of market openings in the state at a glance, indicates that although the openings each numbers vary from 6 to 66 in various districts, there are 7 districts which have 6 openings while there are only 5 districts each of which has 48 or more openings per week. The most of the districts have the openings varying from 12 to 36. If it is generalized on the above, then it seems that there is no significant difference between the openings of RAMs of various districts of the state. But in case the entire variation, 6 to 66, is considered then it seems that there does exist a significant difference in these openings. Hence, it seems logical to test statistically the phenomenon to provide (objectively) the correct picture. Dixit (1988, pp. 213-214) has made an effort in this connection taking up the case of Hamirpur District of U.P.

The Null Hypothesis

There is no significant difference between true frequencies i.e. O and the expected frequencies i.e. E in the entire population i.e. the series of openings of RAMs per week in various districts of U.P.

Test Technique $\quad\quad : \chi^2$

$H_o \quad\quad\quad\quad : f\chi_o = f\chi_e$

$H_a \quad\quad\quad\quad : f\chi_0 \neq f\chi_e$

Test Statistic $\quad\quad : \chi^2 , \text{df.} = k-1 = 59$

Significance   : P = 0.01, 0.02, 0.05, 0.10

Decision Rule   : Reject H$_o$ if : χ^2 > 87.16 at 0.01 level

                      : χ^2 > 83.39 at 0.02 level

                      : χ^2 > 77.93 at 0.05 level

                      : χ^2 > 73.27 at 0.10 level

The symbol $f\chi$ simply indicates the frequency of the variable X, in this case of 60 classes. The numbers of openings vary from 6 to 66 in these districts. The mean has been calculated as 25.38 while the X^2. The detailed statistics has been given in Table 5.6.

Table 5.6 : U.P. : Number of RAMs Openings — Chi-square Statistics

District Sl. No.	O	O-E	$(O-E)^2$	$(O-E)^2/E$
1.	66	40.61666	1649.713	64.99200
2.	54	28.61666	818.9136	32.26186
3.	48	22.61666	511.5136	20.15155
4.	48	22.61666	511.5136	20.15155
5.	48	22.61666	511.5136	20.15155
6.	42	.16.61666	276.1136	10.87775
7.	42	16.61666	276.1136	10.87775
8.	42	16.61666	276.1136	10.87775
9.	42	16.61666	276.1136	10.87775
10.	42	16.61666	276.1136	10.87775
11.	38	12.61666	159.1802	6.271054
12.	36	10.61666	112.7136	4.440457
13.	36	10.61666	112.7136	4.440457
14.	36	10.61666	112.7136	4.440457
15.	36	10.61666	112.7136	4.44057
16.	36	10.61666	112.7136	4.440457
17.	36	10.61666	112.7136	4.440457
18.	36	10.61666	112.7136	4.440457
19.	34	8.616666	74.24694	2.925027
20.	30	4.616666	21.31361	0.839669
21.	30	4.616666	21.31361	0.839669
22.	30	4.616666	21.31361	0.839669
23.	30	4.616666	21.31361	0.839669
24.	30	4.616666	21.31361	0.839669
25.	30	4.616666	21.31361	0.839669
26.	24	-1.38333	1.913611	0.839669
27.	24	-1.38333	1.913611	0.075388
28.	24	-1.38333	1.913611	0.0755388
29.	24	-1.38333	1.913611	0.0755388
30.	24	-1.38333	1.913611	0.0755388
31.	24	-1.38333	1.913611	0.0755388
32.	24	-1.38333	1.913611	0.0755388

33.	19	-6.38333	40.74694	1.605263
34.	19	-6.38333	40.74694	1.605263
35.	18	-7.38333	54.51361	2.147614
36.	18	-7.38333	54.51361	2.147614
37.	18	-7.38333	54.51361	2.147614
38.	18	-7.38333	54.51361	2.147614
39.	18	-7.38333	54.51361	2.147614
40.	18	-7.38333	54.51361	2.147614
41.	18	-7.38333	54.51361	2.147614
42.	18	-7.38333	54.51361	2.147614
43.	18	-7.38333	54.51361	2.147614
44.	18	-7.38333	54.51361	2.147614
45.	17	-8.38333	70.28027	2.768756
46.	14	-11.3833	129.5802	5.104935
47.	12	-13.3833	179.1136	7.056347
48.	12	-13.3833	179.1136	7.056347
49.	12	-13.3833	179.1136	7.056347
50.	12	-13.3833	179.1136	7.056347
51.	12	-13.3833	179.1136	7.056347
52.	12	-13.3833	179.1136	7.056347
53.	8	-17.3833	302.1802	11.90467
54.	6	-19.3833	375.7136	14.80158
55.	6	-19.3833	375.7136	14.80158
56.	6	-19.3833	375.7136	14.80158
57.	6	-19.3833	375.7136	14.80158
58.	6	-19.3833	375.7136	14.80158
59.	6	-19.3833	375.7136	14.80158
60.	6	-19.3833	375.7136	14.80158

Note : Three districts — Uttarkashi, Tehri Garhwal, and Chamoli are not included

Values at various levels are : $0.01 = 87.16$; $0.02 = 83.39$,

$0.05 = 77.93$; $0.10 = 73.27$

However, since the chi-square value is more than 87.16 i.e. even at 0.01 level, at all the levels it is above, hence demonstrating that at all

these levels the hypothesis set for rejection is rejected and hence, the Ha — the alternate hypothesis — is accepted.

5.5.6 TYPOLOGY BASED ON CLOSING DAYS

Every market has one or more closing days as no market functions on all the seven days of the week under government regulation as there has to be one weekly off. In case of, even, the daily market also, there is one day off during the week. In case of other types of markets i.e., weekly, bi-weekly etc., there are more closing days in a week. It also shows that bigger the market settlement less the number of closing days in a week while a smaller market comparatively has more closings in a week.

Besides, the closings on particular days also have some social significance as in an area of Muslim dominated population, there may be more closings on Fridays as the Muslim community likes to go to the mosque at least on Fridays (if not daily). Hence, they like to take off from their daily duty on Fridays.

Thus, the closing day is also an important internal characteristic of the market concerned. Hence, this aspect has been considered for typology too.

When the closing days of all the RAMs of the state were studied, it was observed that no day of the week i.e., Sunday through Saturday — had more than five closings in a week in any district. Hence, the number of districts which has one closing on a particular day of the week, two closings on the same particular day of the week, three closings .... five closings on the same particular day of the week were taken into account. This had been done for all the 7 days of the week — Sunday through Saturday. The percentage of the closings and other details have been given in Table 5.7.

Table 5.7 : U.P. : Typology of RAMS Based on Closings Days

Days	Closings						Total	Percentage
	None	One	Two	Three	Four	Five		
Sunday								
ND	11	24	13	10	3	2	63	
NC	-	24	26	30	12	10	102	30.77
Monday								
ND	36	16	8	2	1	-	63	
NC	-	16	16	6	4	-	42	14.72
Tuesday								
ND	44	14	3	2	-	-	63	
NC	-	14	6	6	-	-	26	9.11
Wednesday								
ND	38	15	10	-	-	-	63	
NC	-	15	20	-	-	-	35	12.27
Thursday								
ND	39	17	7	-	-	-	63	
NC	-	17	14	-	-	-	31	10.86
Friday								
ND	38	20	4	1	-	-	63	
NC	-	20	8	3	-	-	31	10.86
Saturday								
ND	48	12	3	-	-	-	63	
NC	-	12	6	-	-	-	18	6.41

ND = Number of Districts ; NC = Number of Closings

I. Sunday Closings

It has been observed that Sunday is the only day which falls under all the classes made in the analysis as there are some districts with one closing (on Sunday) each .... as also some of districts with 5 closings (on Sunday) each.

There are 24 districts which have one Sunday each as the closing day. This is the largest number of districts in this classification. However,

there are only 2 districts which have 5 Sundays each as closing day. These are Etawah, and Bahraich districts. The total number of closings, thus, stands at 10 under this sub-class. Likewise, three districts — Kanpur Dehat, Agra, and Maharajganj have four Sundays each, thus, with 12 closings in all. Ten districts — Saharanpur, Muzaffarnagar, Meerut, Bullandshahr, Aligarh, Mathura, Sitapur, Siddharthnagar, Gorakhpur, and Allahabad — have three Sundays each totalling to 30 closings on Sundays. There are thirteen districts — Nainital, Budaun, Bareilly, Mainpuri, Farrukhabad, Kheri, Barabanki, Gonda, Deoria, Jaunpur, Varanasi, Ghazipur, and Jalaun with two closings each on Sundays with a total of 26 closings. However, 11 districts have absolutely no Sunday closings. These districts are : Hardwar, Bijnor, Rampur, Etah, Raebareli, Basti, Sonbhadra, and Banda as also the three hill districts — Uttarkashi, Tehri, and Chamoli.

The total number of closings on Sunday is 102 which is the highest in the series in the reference. The percentage of this comes to 30.77.

II Monday Closings

Monday falls under the first four of the five sub-classes which have been made for the number of (particular) days each district.

Out of 63 districts, 36 districts absolutely have no closings on Mondays. There are 16 districts with one Monday each as their closing day. These districts are : Nainital, Saharanpur, Hardwar, Muzaffarnagar, Rampur, Budaun, Pilibhit, Etah, Ferozabad, Lucknow, Faizabad, Basti, Maharajganj, Azamgarh, Sonbhadra, and Banda. The number of closings, thus, is 16 under this. Eight districts have two closings each thus the total number is 16. These districts are : Bullandshahr, Bijnor, Kanpur Dehat, Sitapur, Unnao, Fatehpur, Jhansi, and Jalaun. There are 2 districts — Moradabad, and Kheri — with three closings each on Mondays. While only one district — Gonda — has

four closings on this day. The total number of closings on Monday, thus, comes to 42. This is the second highest number of the series following Sunday which has 102 closings. The percentage of closings on Monday is 14.72.

III. Tuesday Closings

Tuesday falls under the first three sub-classes meaning thereby that four — Tuesday-closing districts and five-Tuesday-closing districts are absolutely absent in this case.

There are 44 districts in the state which have absolutely no closings on Tuesdays. Fourteen districts have one each Tuesday closing. These districts are Nainital, Ghaziabad, Bullandshahr, Etawah, Lucknow, Raebareli, Barabanki, Gonda, Jaunpur, Varanasi, Ghazipur, Jhansi, Hamirpur, and Banda. The total closings, thus, are 14 under this sub-class. There are 3 districts — Moradabad, Sitapur, and Jalaun — with 2 Tuesday closings each. The number of closings, thus, under the sub-class is 6. Only 2 districts — Etah and Farrukhabad — have three closings each on Tuesday. The total closings are 6 under this class. The grand total of Tuesday closings is 26, the percentage of which stands at 9.11.

IV. Wednesday Closings

This day falls under the first two sub-classes only. The number of districts with one Wednesday closing each is 15. These districts are : Meerut, Ghaziabad, Moradabad, Rampur, Budaun, Aligarh, Firozabad, Hardwar, Sitapur, Unnao, Siddharthnagar, Maharajaganj, Ghazipur, Mirzapur, and Banda. The total closings are 15 under this. There are 10 districts which have 2 Wednesdays each as closing days. These districts are Nainital, Saharanpur, Hardwar, Muzaffarnagar, Bullandshahr, Bijnor, Raebareli, Sonbhadra, Jalaun, and Hamirpur. The number of closings, thus, is 20. The grand total of closings under this is 35, with 12.27 as its percentage.

IV. Thursday Closings

This day also has only 2 sub-classs — the first two, as in the earlier case. There are 39 districts which absolutely have no Thursday closings. This, 39, number is the highest following Saturday (48) and Tuesday (44). As far as the districts which have Thursday closings are concerned, there are 17 districts with one Thursday each. These are Dehradun, Nainital, Ghaziabad, Rampur, Aligarh, Agra, Mainpuri, Farrukhabad, Kheri, Hardoi, Lucknow, Faizabad, Maharajaganj, Ballia, Fatehpur, Jhansi, and Banda. These closings also stand at 17. The districts which have two Thursday closings each are only 7 in number. These districts are : Bullandshahr, Bijnor, Budaun, Sitapur, Unnao, Jhansi, and Hamirpur. The closings under this sub-class are 14 again. The total number of closings on Thursday stands at 31 i.e., 10.86 per cent.

VI. Friday Closings

Friday falls, however, under the three sub-classes i.e. excepting the fourth and the fifth sub-classes. There are 38 districts in U.P. which have absolutely no closings on Fridays. One Friday closing districts are 20 in number. These districts are : Nainital, Bullandshahr, Bijnor, Pilibhit, Shahjahanpur, Aligarh, Etah, Firozabad, Hardoi, Unnao, Lucknow, Raibareli, Faizabad, Bahraich, Sultanpur, Maharajganj, Ballia, Allahabad, Lalitpur, and Hamirpur. The total closings also are 20 under this class. Four districts which have 2 closings each on Fridays are : Saharanpur, Budaun, Agra, and Banda. The total closings come to 8. There is just one district, Sitapur, which has three Friday closings. The number of closings in this reference stands at three. The entire series of this day has, thus, 31 closings in all again with 10.86 per cent.

VII. Saturday Closings

This day also has only the first two sub-classes. However, the highest number of districts, 48, have no closings at all on Saturdays in the state. The one Saturday closing districts are 12 in number. These

districts are : Nainital, Muzaffarnagar, Meerut, Bareilly, Agra, Hardwar, Lucknow, Raebareli, Maharajganj, Fatehpur, Jhansi, and Jalaun. The number of closings are, thus, 12 under this sub-class. The districts which have two Saturdays each as closing days are only 3 in number. These districts are Dehradun, Shahjahanpur, and Sitapur. Therefore, the number of closings under this reference is 6. The total number of closings on Saturday stands at 18 i.e., 6.41 per cent.

The above analysis makes it clear that there are 102 Sundays, 42 Mondays, 26 Tuesdays, 35 Wednesdays, 31 Thursdays, 31 Fridays, and only 18 Saturdays as the closing days of the RAMs in the state. It is obvious that the most favoured day for closings is Sunday followed by Monday, Wednesday, Thursday-Friday together. Sunday closings are favoured most because the markets have been established by the government of which offices are also closed on Sundays. The smallest closings in the state are on Saturdays and Tuesdays. It is to mention again that the three hill districts — Uttarkashi, Tehri Garhwal, and Chamoli — although have one RAM each but, actually, under the regulation, no openings are taking place there. Hence, in these districts, all the 7 days have been considered as closing days.

Typology Contd .....

6. TYPOLOGY (... CONTD)

6.1 OBJECTIVE

The objective of the present piece of research is to present the relevant features of the remaining significant typologies developed by the scholar. Thus, this chapter comprises the discussion of the remaining six typologies which are based on : nature of market settlement, population numbers, road length, market fee, crop arrivals, and marketed surplus.

6.2 TYPOLOGY

6.2.1 TYPOLOGY BASED ON NATURE OF SETTLEMENT

The archival research reveals that there are various types of settlements where various RAMs are held in U.P. The nature of market settlement is an important characteristic of a RAM. The market-settlements vary from a village to an urban area. This typology considers the following seven classes : urban agglomeration, municipal corporation, municipal board, cantonement area, town area, notified area, and village.

It has been observed that the classes amongst these are the highest under the municipal board (MB) category followed by town area (TA) and villages. It is further followed by urban area (UA). Although it has only two sub-classes. However, there exist no sub-classes more than one each under the municipal corporation (MC), cantonement area (CA), and notified area (NA).

Out of 262 RAMs, 148 are held at MBs, 59 at TAs, 27 at Villages, 25 at UAs and one each at MCs, CAs, and NAs. The necessary statistical information has been given in Table 6.1 .

Table 6.1 : U.P. : Typology of RAMs Based on Nature of Settlement

Sub-class	Nature of Market Settlement												
	UA		MC		MB		CA		TA		NA		V	
	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR
1.	19	19	1	1	23	23	1	1	18	18	1	1	11	11
2.	3	6	-	-	11	22	-	-	10	20	-	-	5	10
3.	-	-	-	-	6	18	-	-	7	21	-	-	2	6
4.	-	-	-	-	10	40	-	-	-	-	-	-	-	-
5.	-	-	-	-	3	15	-	-	-	-	-	-	-	-
6.	-	-	-	-	2	12	-	-	-	-	-	-	-	-
7.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.	-	-	-	-	2	18	-	-	-	-	-	-	-	-
Total	22	25	1	1	57	148	1	1	35	59	1	1	18	27
Percentage	9.54		.39		56.49		.39		22.61		.39		10.30	

UA = Urban Area, MC = Municipal Corporation, MB = Municipal Board, CA = Cantonement Area, TA = Town Area, NA = Notified Area, V = Village, ND = Number of Districts, and NR = Number of RAMs.

I. Urban Area RAMs

There are 41 districts which have absolutely no urban areas where RAMs are held in the state. Only 22 districts have urban areas with RAMs. Out of these, 19 districts have one each urban area while 3 districts have two each urban areas. These districts respectively are : Almora, Muzaffarnagar, Meerut, Ghaziabad, Bijnor, Moradabad,

Bareilly, Shahjahanpur, Mathura, Agra, Farrukhabad, Kanpur Nagar, Lucknow, Barabanki, Faizabad, Allahabad, Varanasi, Mirzapur, Jhansi; and Dehradun, Hardwar, and Firozabad. Dehradun has Rishikesh and Dehradun; Hardwar has Roorkee, and Hardwar Union; while Firozabad has Tundla, and Firozabad as urban areas. In the 19 above UAs, 1 each RAM is held while in the three districts 2 each RAMs are held. The grand total of RAMs is 25.

II. Municipal Corporation RAMs

It is important to note that there is just one municipal corporation in the state which has a RAM. This RAM is located at Gorakhpur Municipal Corporation in the eastern part of U.P.

III. Municipal Board RAMs

This is the biggest class amongst all the types of settlements under which RAMs are held in the state. In comparison to the other cases this class is rather too large and hence, it is the most significant too.

The sub-classes under this go upto 9 but under 7 and 8 sub-classes there are absolutely no districts and hence no RAMs too.

There are 6 districts which have no MBs at all where the RAMs are held. These districts are : Almora, Kanpur Nagar, Lucknow, Gorakhpur, Mau, and Allahabad. Thus, 57 districts of the state have the MBs with RAMs.

Twenty-three districts have 1 MB each where RAMs are held. These districts are : Uttarkashi, Dehradun, Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, Hardwar, Mathura, Mainpuri, Kanpur Dehat, Barabanki, Sultanpur, Basti, Siddharthnagar, Maharajganj, Deoria, Azamgarh, Pratapgarh, Varanasi, Ghazipur, Mirzapur, Sonbhadra, and Lalitpur. Out of these districts, 6 are located in hill region, 3 districts

are located in western U.P., 1 district in central U.P., 12 districts are located in eastern U.P. and 1 district is located in the Bundellkhand region. The total number of RAMs under this is 23.

There are 11 districts which have 2 MB RAMs each. These districts are : Rampur, Bareilly, Shahjahanpur, Firozabad, Unnao, Raebareli, Bahraich, Faizabad, Ballia, Fatehpur, and Banda.

Thus, there are no hill districts in this sub-class and only there is one Bundellkhand district too. Of the rest, 4 districts are in western U.P., 2 are from central U.P., and 4 districts are located in eastern U.P. The total number of RAMs being held in the MBs is 22 under this sub-class.

There are 6 districts which have 3 MB RAMs each. These districts are : Meerut, Ghaziabad, Pilibhit, Agra, Farrukhabad, and Jaunpur. The number of RAMs is 18 under this sub-class.

However, 10 districts have 4 MB-RAMs each. Out of these districts are : Saharanpur, Muzaffarnagar, Etah, Etawah, Kheri, Hardoi, Sitapur, Jhansi, Jalaun, and Hamirpur. The number of RAMs under this sub-class is 40.

Three districts have 5 MB-RAMs each. These districts are Budaun, Aligarh, and Gonda. The RAMs are 15 in number.

Only 2 districts have 6 MB RAMs each. These districts are Bijnor, and Moradabad. The number of RAMs, thus, is 12 in this sub-class.

Likewise, 2 districts have 9 MB-RAMs each. These districts are Nainital, and Bullandshahr. The number of RAMs in this sub-class, thus, is 18.

There are as many as 148 RAMs in the state which are located at various MBs.

IV. Cantonement Area RAMs

Similar to the municipal corporation, there is just one cantonement Area which holds one RAM. This RAM is located in Dehradun Cantonement Area.

V. Town Area RAMs

This is the second largest sub-class in the context of RAMs located in any settlement type. This follows the MBs under which 148 RAMs are located. Under the TAs, there are 59 RAMs located in 35 town area settlements.

There are 28 districts which absolutely have no TAs with RAMs. Thirty-five districts have TAs with RAMs in the state. There are 18 districts which have one TA-RAM each. Thus, 18 RAMs are held in this sub-class. The districts which are included in this sub-class are : Meerut, Rampur, Shahjahanpur, Aligarh, Mathura, Etah, Farrukhabad, Hardoi, Unnao, Bahraich, Gonda, Siddharthnagar, Maharajganj, Varanasi, Sonbhadra, Lalitpur, Jhansi, and Banda.

Ten districts have two each TA-RAMs in the state. These districts are : Muzaffarnagar, Bullandshahr, Mainpuri, Etawah, Kanpur Dehat, Mau, Ballia, Ghazipur, Jalaun, and Hamirpur. The number of RAMs in this sub-class is 20.

Seven districts — Saharanpur, Budaun, Agra, Sitapur, Raebareli, Fatehpur, and Allahabad — have 3 TA-RAMs each. The number of RAMs in this sub-class is 21.

The grand total of RAMs located at these settlements — the TAs — is 59 which are located in 35 districts.

VI. Notified Area RAMs

Again, similar to the Municipal Corporation, and Cantonement Area, there is only on notified area which has a RAM in the state. It is located in the Tulsipur Notified Area in Gonda district. The Tulsipur RAM is near the India-Nepal International border.

VII. Village RAMs

This sub-class is the third largest sub-class in this reference. There are 27 RAMs which are locted in various villages of the state of U.P. This sub-class follows the UA-RAMs (148), and MB-RAMs (59). The districts which have such RAMs are 18 in number.

Eleven districts have one RAM each. These 11 districts are : Shaharanpur, Agra, Farrukhabad, Lucknow, Barabanki, Sultanpur,Deoria, Fatehpur, Allahabad, Mirzapur, and Jhansi. These districts have 11 RAMs in all.

Five districts which have 2 RAMs each located at various villages are : Kheri, Siddharthnagar, Gorakhpur, Maharajaganj, and Banda. The number of RAMs under this sub-class is 10.

There are only 2 districts which have 3 RAMs each located in this settlement type. These are Kanpur Dehat, and Bahraich districts. The number of RAMs with these settlements is 6.

Thus in all, there are 27 RAMs which are located in various villages of 18 districts of the state. As many as 45 districts have absolutely no village-RAMs.

The above analysis shows that the largest number (148) of RAMs is located at MBs in 57 districts. The second largest number of such RAMs is located at the TAs in 35 districts of the state. There are 25 RAMs which are located at various UAs in 22 districts. Twenty-seven

RAMs are located at various villages of U.P. The Municipal Corporation, Cantonement Area, and Notified Area have one RAM each in the state.

6.2.2 TYPOLOGY BASED ON POPULATION NUMBER

In the present case, the RAMs of the state have been classified on the basis of population number. This criterion of market classification has been used by several scholars — although, particularly with reference to periodic markets. In case of the regulated agricultural markets, first, the typology itself has not been presented by any scholar; secondly, in case any attempt has been made, the classification has been done on the basis of crop arrivals. This characteristic is taken into consideration, like the other characteristics which have been taken up earlier to this, by the present author only. Table 6.2 represents the relevant information in this connection.

Table 6.2 : U.P. : Typology of RAMs Based on Population Number

No. of RAMs	Population Number (in thousand)											
Sub-Class	Upto 10		10 - 20		20 - 50		50 - 100		More than 100		Total	RAMs
	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	No.	%
1 RAM	18	18	19	19	23	23	22	22	31	31	113	43.13
2 RAMs	9	18	6	12	16	32	6	12	2	4	78	29.78
3 RAMs	3	9	5	15	6	18	0	0	1	3	45	17.17
4 RAMs	1	4	3	12	-	-	1	4	-	-	-	-
5 RAMs	-	-	-	-	-	-	-	-	-	-	-	-
6 RAMs	-	-	-	-	1	6	-	-	-	-	6	2.29
Total	31	49	33	58	46	79	29	38	34	38	262	100
Percentage	18.74		22.2		30.4		14.50		14.50		100	

ND = Number of Districts, NR = Number of RAMs

On the basis of population, all the RAMs of the state have been classified into 5 major types. The further divisions have been done in view of number of districts falling under a particular class. The 5 main classes are : the RAMs with a population upto 10,000, the RAMs with the population, 10,000 - 20,000; the RAMs with population, 20,000 - 50,000; the RAMs with population, 50,000 - 1;00,000; and the RAMs with more than 1,00,000 population. The details of these are as follows :

I. RAMs with Population upto 10,000

The population number considered in this class is rather very low, just upto 10,000. This type has four further divisions on the basis of number of RAMs/district. There are 18 districts with one RAM each having a

population upto 10,000. These districts are : Dehradun, Nainital, Saharanpur, Bullandshahr, Budaun, Etah, Mainpuri, Etawah, Farrukhabad, Hardoi, Lucknow, Raebareli. Barabanki, Sultanpur, Deoria, Mau, Sonbhadra, and Lalitpur. Thus, the number of RAMs is also 18 in this sub-class.

There are 9 districts with 2 RAMs each having a population upto 10,000 in the state. These districts are Agra, Kheri, Gorakhpur, Fatehpur, Allahabad, Ghazipur, Jalaun, Hamirpur, and Banda. The number of RAMs in this sub-class is 18 again.

There are 3 districts which have 3 RAMs each within this sub-class. These districts are : Kanpur Dehat, Siddharthnagar, and Maharajaganj. The number of RAMs in the sub-class is 9.

Only one district has four RAMs with a population upto 10,000 level. This district is Bahraich. Thus, the number of RAMs is also 4 in this sub-class.

There are 32 districts which have absolutely no RAMs under this population sub-class. Thus, 31 districts have 49 RAMs in all.

II. RAMs with 10,000 - 20,000 Population

The population number considered in this class may be termed as low which is 10,000 to 20,000. This is the second type. As regards, the number of RAMs also this type, stands at second place after the third type. There are 30 districts which have no RAMs falling under this population class. Thus, 33 districts of the state have as many as 58 RAMs. Nineteen districts have one RAM each under this population class. These districts are : Uttarkashi, Dehradun, Chamoli, Muzaffarnagar, Bullandshahr, Bijnor, Moradabad, Saharanpur, Aligarh, Etah, Mainpuri, Farrukhabad, Unnao, Fatehpur, Ghazipur, Mirzapur,

Jalaun, Hamirpur, and Banda. The number of RAMs also is nineteen in this sub-class.

Six districts — Etawah, Raebareli, Jaunpur, Ballia, Allahabad, and Varanasi — have 2 such RAMs each. The total, hence, comes to 12.

Five districts — Nainital, Saharanpur, Budaun, Kanpur Dehat, and Gonda — have 3 RAMs each under this population class. The number of RAMs therefore, is 15 in this case.

Three districts — Agra, Sitapur and Jhansi — have four such RAMs each. The total number therefore, is 12.

In all, there are 58 RAMs in 33 districts of the state under this population class.

III. RAMs with 20,000 - 50,000 Population

The population number employed in this type may be placed in the medium class. This is the third population class. There are 17 districts which absolutely have no RAMs under this population class. In the state, there are 46 districts which have RAMs in this reference.

There are 23 districts which have one RAM each, 16 districts have 2 RAMs each, 6 districts have 3 RAMs each, and just one district under this class has 6 RAMs. This gives a total of 79 RAMs in this entire class.

The 23 districts mentioned in this case are : Tehri Garhwal, Pauri Garhwal, Pithoragarh, Almora, Hardwar, Agra, Etah, Etawah, Unnao, Raebareli, Bahraich, Barabanki, Faizabad, Siddharthnagar, Maharajganj, Deoria, Mau, Ballia, Fatehpur, Ghazipur, Sonbhadra, Jhansi, and Banda.

The 16 districts of this class as mentioned above are Nainital, Sahranpur, Meerut, Ghaziabad, Bijnor, Moradabad, Rampur, Budaun, Bareilly, Pilibhit, Shahjahanpur, Mathura, Firozabad, Farrukhabad, Sitapur, and Gonda.

The six districts having 3 RAMs each are Muzaffarnagar, Aligarh, Kheri, Hardoi, Jalaun, and Hamirpur.

The only one district which have 6 RAMs under this population class is Bullandshahr.

The 17 districts which do not have RAMs of this population class are Uttarkashi, Dehradun, Chamoli, Mainpuri, Kanpur Dehat, Kanpur Nagar, Lucknow, Sultanpur, Basti, Gorakhpur, Jaunpur, Azamgarh, Pratapgarh, Allahabad, Varanasi, Mirzapur, and Lalitpur.

IV. RAMs with 50,000 - 1,00,000 Population

The population number used in this class may be called as high. This is the fourth type of the present typology based on population number. There are 34 districts in the state which have absolutely no RAMs falling under this population class. These districts are Uttarkashi, Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, Almora, Ghaziabad, Rampur, Bareilly, Pilibhit, Shahjahanpur, Aligarh, Mathura, Agra, Kanpur Dehat, Kanpur Nagar, Sitapur, Unnao, Lucknow, Raebareli, Bahraich, Siddharthanagar, Gorakhpur, Maharajganj, Deoria, Jaunpur, Mau, Fatehpur, Allahabad, Varanasi, Ghazipur, Mirzapur, Sonbhadra, and Jhansi.

There are 29 districts which fall under this population class. Out of these 22 districts have one RAM each. These districts are : Dehradun, Saharanpur, Hardwar, Moradabad, Budaun, Firozabad, Mainpuri, Etawah, Farrukhabad, Kheri, Hardoi, Barabanki, Faizabad, Sultanpur,

Basti, Azamgarh, Ballia, Pratapgarh, Lalitpur, Jalaun, Hamirpur, and Banda. The number of RAMs stands at 22 under this.

There are 6 districts which have 2 RAMs each. These districts are Nainital, Muzaffarnagar, Meerut, Bullandshahr, Etah, and Gonda. The number of RAMs under this comes to 12.

One district — Bijnor — has 4 RAMs.

Under this population class therefore, the total number of RAMs is 38 which are located in 29 districts of the state as mentioned above.

V. RAMs with Population more than 1,00,000

This is the highest population class which may be termed as the very high population class also. There are 29 districts under this class which have absolutely no such RAMs. These districts are : Uttarkashi, Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, Almora, Bijnor, Etah, Mainpuri, Kanpur Dehat, Kheri, Hardoi, Barabanki, Gonda, Sultanpur, Basti, Siddharthanagar, Maharajganj, Deoria, Azamgarh, Mau, Ballia, Pratapgarh, Ghazipur, Sonbhadra, Lalitpur, Jalaun, Hamirpur, and Banda.

One district — Moradabad — has 3 such RAMs.

Two districts — Ghaziabad, Aligarh — have 2 RAMs each. Thus, the number of RAMs in this sub-class is 4. The rest 31 districts have one each such RAMs. Therefore, the number of RAMs in these districts is also 31.

In all, therefore, there are 38 RAMs under this population class located in 34 districts of the state.

Thus, in the population classes, the highest number of RAMs, 79, is located in 20,000 - 50,000 population class. These market centres are

found in 46 districts. The second highest number of RAMs, 58, comes under the 10,000 - 20,000 population class which includes 33 districts. The third highest number of RAMs, 49, belongs to the class with a population upto 10,000 while the number of districts in this case is 31. The fourth and fifth population classes i.e., 50,000 - 1,00,000, and above 1,00,000 have 38 RAMs each while the number of districts in the fourth class is 29 as against 34 in the fifth.

6.2.3 TYPOLOGY BASED ON ROAD-LENGTH

There can be no two opinions with regard to the significance of road network in the development of markets. The roads play, rather, a key role in the development of the area/region also. This parameter has, therefore, been taken in the classification of RAMs of the state at the district level. The observations show that road-length in various districts of U.P. varies from 12 to 78 km. in an area of 100 km^2 each. Conveniently, in the present case, five classes have been made and the state has, thus, been divided in terms of number of districts. The names to various classes are given in view of the comparison within the state. These classes are as follows : Very low road-length (upto 15 kms per 100 km^2), low road-length (15 - 30 km per 100 km^2), medium road-length (30 - 45 km per 100 km^2), high road-length (45 - 60 km per 100 km^2) , and very high road-length (more than 60 kms per 100 km^2 area). The medium class is the largest one followed by the high road-length class and further followed by very high road-length class. However, the low and very low road-length classes are small and the smallest respectively. The details of the classification are given in Table 6.3 and also in Figure 19.

Table 6.3: U.P. : Typology of RAMs Based on Road-Length

No. of RAMs	Road-length (in kilometer per 100 km² area)											
Sub-Class	15		15 - 30		30 - 45		45 - 60		More than 60		Total	RAMs
	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	No.	%
1 RAM	1	1	2	2	2	2	4	4	1	1	10	3.82
2 RAM	1	2	1	2	1	2	2	4	2	4	14	5.34
3 RAMs	-	-	-	-	6	18	3	9	3	9	36	13.74
4 RAMs	-	-	1	4	3	12	1	4	3	12	32	12.21
5 RAMs	-	-	-	-	3	15	3	15	1	5	35	13.36
6 RAMs	-	-	2	12	1	6	3	18	1	6	42	16.03
7 RAMs	-	-	-	-	5	35	1	7	1	7	49	18.70
8 RAMs	-	-	-	-	1	8	2	16	-	-	24	9.16
9 RAMs	-	-	-	-	1	9	-	-	-	-	9	3.44
10 RAMs	-	-	-	-	-	-	-	-	-	-	-	-
11 RAMs	-	-	-	-	-	-	1	11	-	-	11	4.20
Total	2	3	6	20	23	107	20	88	12	44	262	
Percentage	-	1.10	-	7.60	-	40.03	-	35.18	-	16.09		100

ND = Number of Districts; NR = Number of RAMs

I. Very Low Road-Length

This class considers road-length upto 15 km per 100 km². This, in general terms even, is very low. However, there are only 2 districts in the state which fall under this class. Sonbhadra district has just 12.96

km. road-length per 100 km^2 while the Chamoi district has 15 km road-length. These districts have 2 and 1 RAM(s) respectively. Thus, the total number of RAMs is 3 only, of which percentage is 1.10.

This is the smallest class in the entire series of 5 classes. Besides being the smallest class, the number of RAMs, too, is too small in this class. While one district of this class belongs to the hilly region, the other one belongs to the low hills of Vindhya region falling in the eastern U.P.

II. Low Road-Length

The extents of this class are 15 km and 13 km road-length per 100 km^2 area. In comparison, this road-length is rather low.

This class has 6 districts namely : Plthoragarh, Uttarkashi, Shahjahanpur, Kheri, Bharaich, and Lalitpur. The road-lengths of these districts are 15.13, 16.18, 29.68, 28.40, 27.61, and 23.89 km respectively. While the number of RAMs of these districts are 1,1, 4, 6, 6, and 2 respectively. A total of 20 RAMs are located in these 6 districts of which the first two belong to the hill region, while the last one belongs to the Bundelkhand region. The rest three districts are, however, located one each in the western U.P., central U.P. and the eastern U.P. The percentage of the RAMs located in these districts is 7.60 only. This is the second smallest class in terms of both the number of districts, as also the number of RAMs too, and therefore, in terms of the percentage of RAMs as well.

III. Medium Road-Length

The road-length limits of this class are 30 km and 45 km per 100 km^2 area. This can be considered as the medium class in respect of the road-length as per the present classification. There are 23 districts in

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
TYPOLOGY BASED ON ROAD LENGTH

Fig. 19
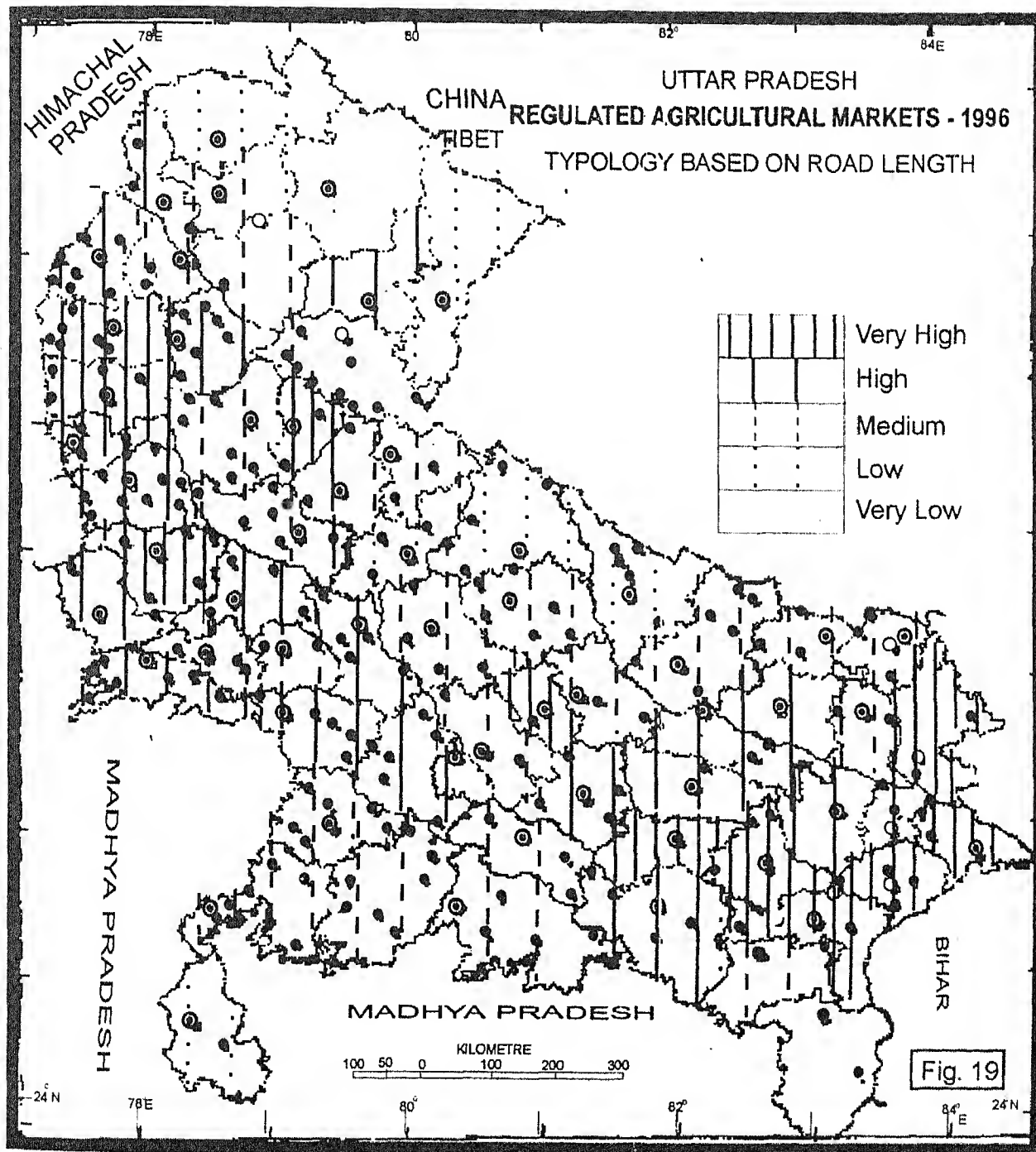
this class. The road-lengths of these districts have been shown in the brackets : 3 districts — Tehri Garhwal (32.59), Pauri Garhwal (40.81), and Nainital (43.93) — are located in hill region of the state. The numbers of RAMs in these districts are 1,1, and 9 respectively. The western U.P. region with 6 districts under this class — Budaun (35.78), Hardwar (42.54), Moradabad (43.99), Pilibhit (38.41), Firozabad (39.47), and Mainpuri (32.17) — has the numbers of RAMs as 8, 3, 7, 3, 4, and 3 in order of this serial. The central U.P. region has three districts namely : Hardoi, Sitapur, and Unnao. The road-lengths in these three districts are 36.38, 38.09, and 37.08 km. respectively. The numbers of RAMs in these districts are 5, 7, and 3 respectively. The eastern U.P. has 7 districts under this class. These districts with respective roadlengths are Barabanki (45.09), Gonda (35.01), Siddharthnagar (30.44), Gorakhpur (33.78), Maharajganj (33.78), Fatehpur (36.84), and Mirzapur (34.96). The number of RAMs in these districts are 3, 7, 4, 4, 3, 5, and 2 respectively. The four districts of the Bundellkhand region are Jhansi, Jalaun, Hamirpur, and Banda. The road-lengths of these districts respectively are 41.26, 37.76, 23.47, and 24.37 km^2 per 100 km^2 area. The numbers of RAMs of the respective districts are 6, 7, 7, and 5. In all, there are 107 RAMs located in these districts. The percentage of these RAMs is 40.03. This class is the largest in all the terms of the number of districts, the number of RAMs, as also the percentage of the RAMs.

IV. High Road- Length

This class has the road-length limits as 45 and 60 km per 100 km^2 area. This range is rather high in the classification and hence, it can be termed as high road-length class. There are 20 districts in this class. Out of these 2 districts namely : Dehradun, and Almora with 46.60 and 57.10 km are from the hill region. In these two districts, there are 4 RAMs and 1 RAM respectively. The western U.P. region has 7 districts

namely : Saharanpur, with 52.07 km as road-length and 8 RAMs, Bullandshahr with 55.40 km as road-length and 11 RAMs, Bijnor with 55.73 km as road-length and 7 RAMs, Bareilly with 52.72 km road-length and 3 RAMs, Mathura with 58.28 km road-length and 3 RAMs, Agra with 50.73 km road-length and 8 RAMs, and Etah with 56.14 km road-length and 5 RAMs. The central U.P. region has 5 districts in this class. These districts are : Etawah, with 46.65 km road-length and 6 RAMs, Farrukhabad with 45.06 road-length and 6 RAMs, Kanpur Dehat with 46.97 km road-length and 6 RAMs, Kanpur Nagar with 57.93 km road-length and 1 RAM, and Raebareli with 50.99 km road-length and 5 RAMs. The eastern U.P. region has 6 districts in this class namely : Faizabad, with 48.57 km road-length and 3 RAMs, Sultanpur with 56.15 km road-length and 2 RAMs, Basti with 52.98 km road-length and 1 RAM, Azamgarh with 55.71 km road-length and 1 RAM, Mau with 56.33 km road-lengths and 2 RAMs, and Allahabad with 45.68 km road-length and 5 RAMs. There are no Bundelkhand districts falling in this class. The road-lengths in most of the districts of this class is in 50s of kms as is revealed by the observations. In all, there are 88 RAMs which have a percentage of 33.18 in the state. This is the second largest class in respect of all the terms — number of districts, number of RAMs, as also the percentage.

V. Very High Road-Length

More than 60 km per 100 km^2 area is the lower limit of this class. This figure is quite high. Hence, the class is termed as very high road-length class. There are 12 districts in this class. No hill districts fall under this nor the Bundelkhand districts too. The western U.P. has 5 districts namely, Muzaffarnagar (78.09 km) with 7 RAMs, Meerut (76.76 km) with 5 RAMs, Ghaziabad (65.48 km) with 4 RAMs, Rampur (64.46 km) with 3 RAMs, and Aligarh (62.46 km) with 6 RAMs. The central U.P. region has only one district — Lucknow — with 68.35 km road-length

and 2 RAMs. The eastern U.P. has 6 districts namely : Deoria with 66.89 kms road-length and 2 RAMs, and Jaunpur with 67.36 km road-length with 3 RAMs, Ballia with 71.43 km road-lengths and 4 RAMs, Pratapgarh with 6.88 km road-length and 1 RAM, Varanasi with 72.90 km road-lengths and 3 RAMs, and Ghazipur with 67.81 km road-length and 4 RAMs. In all, there are 44 RAMs in this class which have a percentage of 16.09 in the state.

6.2.4 TYPOLOGY BASED ON ANNUAL MARKET FEE

This typology has been developed by the Mandi Parishad itself. Thus, it is a classification presented by the Government of U.P. This typology was developed on 1.1.1988 and on the basis of this, all the RAMs of the state have been classified under four types which are : Ka Vishist (i.e. A Special), Ka (i.e. A), Kha (i.e. B), and Ga (i.e. C). These four classes have been done on the basis of the annual income from the Mandi Shulk (i.e. market fee). The range of income and the RAMs classes are as follows : Annual Income upto Rs. 20 lakh RAMs termed as Ga (C class), annual income from Rs. 20 lakh to Rs. 40 lakh RAMs as Kha (B class), annual income from Rs. 40 lakh to Rs. 80 lakh RAMs as Ka (A class), and annual income above Rs. 80 lakh RAMs as Ka Vishisht (A Specialclass). The classes may also be termed as very high fee class, high fee class, medium fee class, and low fee class.

In view of the said market income, the list of these 4 types of RAMs had been prepared by the Mandi Parishad. However, from time to time the Parishad revises the list which generally is published in its annual diary. The revision takes into account all the developments and the rise and fall in the status of these mandies. The list of RAMs published in 1996 January in the Annual Diary of the Parishad has been taken into consideration for the present analysis. Similar to the earlier typology, the present one, also, has been sub-divided into the smaller classes

such as one RAM districts, two RAM districts .... and six RAM districts. Table 6.4 gives the details of this presentation.

Table 6.4 : U.P. : Typology of RAMs Based on Annual Market Fee

| Sub-class | Annual Fee (in Lakh Rupees) | | | | | | | | Total RAMs | |
| | Upto Rs. 20 Ka Vishisht | | Rs. 20 – 40 Ka | | Rs. 40 – 80 Kha | | More than 80 Ga | | | |
	ND	NR	ND	NR	ND	NR	ND	NR	No.	%
1. RAM	20	20	16	16	18	18	20	20	74	28.24
2. RAMs	5	10	5	10	16	32	10	20	72	27.48
3. RAMs	1	3	1	3	5	15	9	27	48	18.33
4. RAMs	-	-	1	4	1	4	7	28	36	13.74
5. RAMs	-	-	-	-	1	5	3	15	20	7.63
6. RAMs	-	-	-	-	-	.-	2	12	12	4.58
Total	26	33	23	33	41	74	51	122	262	
Percentage	12.60		12.60		23.25		46.55			100

ND = Number of Districts, NR = Number of RAMs

I. Market Fee More than Rs. 80,00,000

This is the high fee collection class known as A Special class(Ka Vishisht Varg) RAMs. This class has three sub-classes : one RAM districts, two RAM-districts, and three RAM-districts. The first sub-class has as many as 20 districts. These districts are Saharanpur, Muzzafarnagar, Meerut, Ghaziabad, Moradabad, Bareilly, Mathura, Agra, Mainpuri, Kanpur Nagar, Hardoi, Sitapur, Lucknow, Bahraich, Gorakhpur, Allahabad, Varanasi, Lalitpur, Jhansi, and Jalaun. Thus,

there are 20 RAMs under this sub-class. The second sub-class has 5 districts. These districts are Rampur, Pilibhit, Shahjahanpur, Aligarh, and Kheri. The number of RAMs in these districts is two each totalling to ten. The third sub-class has just one district — Nainital — which has three RAMs under this classification. The total number of RAMS under this type is 33. These RAMs are located in 26 districts. The rest 37 districts of the state have absolutely no A Special class RAMs. The percentage of these RAMs out of 262 RAMs of the state is 12.60.

II. Market Fee Rs. 40,00,000 – Rs. 80,00,000

This is the high fee collection class also known as A Class (Ka Varg). This class is bigger than the previous one in the sense that it has four sub-classes instead of three of the A Special. However, the total number of RAMs is same, 33 in this class too.

There are 16 districts which have one each such RAM. These districts are : Dehradun, Hardwar, Muzaffarnagar, Ghaziabad, Bullandshahr, Budaun, Bareilly, Pilibhit, Aligarh, Kheri, Barabanki, Gonda, Basti, Ballia, Jhansi, and Jalaun. The number of RAMs in all of these, therefore, is 16.

Five districts — Moradabad, Etah, Farrukhabad, Faizabad, and Hamirpur — have two each such RAMs the total of which stands at 10. There is just one district — Etawah, which has three such RAMs.

Similarly, one district — Nainital — has four such RAMs.

The grand total of all of these is, therefore, 33. However, there are as many as 40 districts which do not have the RAMs under this class. The percentage of the RAMs falling under this class is 12.60.

III. Market Fee Rs. 20,00,000 – Rs. 40,00,000

This is also known as B Class (Kha Varg). This class, however, has one more sub-class as compared to the A class because there is one district which has 5 RAMs. Thus, in all, there are 5 sub-classes under this class.

There are 18 districts which have one RAM each of this type. These districts are: Dehradun, Pauri Garhwal, Saharanpur, Hardwar, Muzaffarnagar, Meerut, Mathura, Agra, Etah, Farrukhabad, Unnao, Siddharthnagar, Maharajganj, Azamgarh, Fatehpur, Pratapgarh, Varanasi, and Ghazipur. The number of RAMs in these districts comes to 18.

The 16 districts have two RAMs each of this type. These districts are Nainital, Budaun, Saharanpur, Aligarh, Kanpur Dehat, Kheri, Hardoi, Sitapur, Raebareli, Barabanki, Gonda, Sultanpur, Deoria, Jaunpur, Sonbhadra, and Jalaun. The number of RAMs in these districts stands at 32.

Five districts — Bjnor, Moradabad, Firozabad, Jhansi, and Hamirpur — have three such RAMs each. The total number of RAMs under this, therefore, is 15.

However, only one district — Banda — has 4 such RAMs. Again only one district — Bullandshahr — has five such RAMs.

The grand total of the RAMs is 74 in this class. There are absolutely no such RAMs in 22 districts of the state. The percentage of the RAMs falling under this class is 28.25.

IV. Market Fee upto Rs. 20,00,000

This is the low fee collection class which is also known as C Class (Ga Varg). This class is still bigger in the sense that it has one more sub-class than the earlier B class. Thus, there are 6 sub-classes under this.

There are 12 districts which do not have such RAMs. These districts are : Pauri Garhwal, Nainital, Pilibhit, Shahjahanpur, Kanpur Nagar, Barabanki, Sultanpur, Basti, Deoria, Azamgarh, Pratapgarh, and Sonbhadra.

Two districts — Saharanpur and Agra — have six such RAMs each. The number of RAMs, therefore, is 12.

Three districts — Bullandshahr, Budaun, and Bahraich have five such RAMs each, totalling to 15. The total of these 2 sub-classs comes to 27.

There are 7 districts which have four such markets each. These districts are Muzaffarnagar, Bijnor , Kanpur Dehat, Sitapur, Gonda, Fatehpur, and Allahabad. The number of RAMs in these districts comes to 28.

There are 9 districts which have three such RAMs each. These districts are Meerut, Etawah, Farrukhabad, Raebareli, Siddharthnagar, Maharajganj, Ballia, Ghazipur, and Jalaun. The number of RAMs in this sub-class is, therefore, is 27.

Ten districts — Dehradun, Ghaziabad, Etawah, Mainpuri, Hardoi, Unnao, Gorakhpur, Mau, Mirzapur, and Hamirpur — have two RAMs each. The number of total RAMs, therefore, stands at 20.

The rest 20 districts have one such RAM each. This sub-class has 20 RAMs.

The total of number of RAMs in this class is 122. These RAMs which are located in 51 districts. They have the highest percentage of 46.55 in the state.

In view of the number of RAMS, the C class is the biggest with as many as 122 RAMs followed by B Class with 74 RAMs while both of the A and A Special Classes have 33 RAMs each.

In case of the number of districts having these RAMs, again the C class is the highest with 51 districts under this sub-class, while the B class has 41 districts, and the A Special class has 26 districts but A class has only 23 districts.

6.2.5 TYPOLOGY BASED ON CROP ARRIVALS

The arrivals of various crops to the market for sale through the year is one of the most significant internal features of the RAMs. Actually, this is the ground which is taken for the various considerations like establishments of new market centres, construction of new market sites, upgrading of the sub-yards into main yards as also main yards into higher grades, as it directly affects the market fee. This parameters, hence, has been taken into consideration for typology also.

Since, this head has got great significance, not one year total arrivals, rather an average of three years' (i.e. 1992-93, 1993-94, 1994-95), total annual arrivals have been taken into account. On the basis of the average total annual arrivals of all the 257 (i.e. excepting 5 hill districts of which RAMs are not functioning under regulation as yet) have been taken for typology. The five classes done in this connection are as follows : the average total annual arrival upto 50,000 metric tonnes, the average total annual arrival from 50,000 to 1,00,000 metric tonnes, the average total annual arrival from 1,00,000 to 1,50,000 metric tonnes, the average total annual arrival from 1,50,000 to 2,00,000 metric

tonnes, and the average total annual arrival more than 2,00,000 metric tonnes.

This characteristic also contributes to the total personality of a market and hence in consideration of the status of a market, this parameter is taken into account alike those discussed earlier. The observations reveal that the five hill districts — Uttarkashi, Tehri Garhwal, Chamoli, Pithoragarh, and Almora — have been having the non-functioning markets under regulation and hence these have not been included in the study. It is also obvious that the largest number of RAMs fall in the smallest arrival class followed by the second smallest arrival class. The smallest number of RAMs fall in the second largest arrival class. Besides, one RAM districts are the highest in all the classes and the total of 75 RAMs fall in these districts followed by the 2 RAM districts. The smallest number of RAMs is from the 6 RAM district which is only one and hence the number of these RAMs is also just six. The various details of this typology have been given in Table 6.5.

Table 6.5 : U.P. : Typology of RAMs Based on Arrival of Crops

No. of RAMs	Average Total Annual Arrival ('000 metric tonnes)											
Sub-Class	Upto 50		50 - 100		100 - 150		150 - 200		More than 200		Total	RAMs
	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	No.	%
1.	15	15	25	25	12	12	8	8	15	15	75	29.18
2.	12	24	7	14	4	8	2	4	5	10	60	23.35
3.	8	24	8	24	-	-	-	-	-	-	48	18.69
4.	6	24	1	4	-	-	-	-	-	-	40	15.56
5.	6	30	1	5	-	-	-	-	1	5	40	15.56
6.	1	6	-	-	-	-	-	-	-	-	6	2.33
Total	48	123	42	72	16	20	10	12	21	30	257	
Percent-age	47.70	-	28.65	-	7.63	-	4.50	-	11.52	-	100	

ND = Number of Districts; NR = Number of RAMs

I. Very Low Arrival or Annual Arrival Upto 50,000 Metric Tonnes :

This is the smallest arrival class in terms of volume and there are 123 RAMs which are included in the various districts, 48 in number, of this class. The percentage of the RAMs is 47.70. Ten districts have no such RAMs.

In this class, there are 15 districts which have one RAM each. These districts are Pauri Garhwal of the hill region, Hardwar, Meerut, Rampur, Bareilly, Mathura, Etah, Firozabad, and Mainpuri of the western U.P. region, Hardoi of the central U.P. region, Barabanki, Faizabad, Azamgarh, and Sonbhadra of eastern U.P., and Lalitpur of the Bundelkhand region. Thus, while one district each of the hill, the central U.P., and Bundelkhand region are there, eight districts of the western, and four districts of the eastern U.P. region are also there in this class. These 15 districts contribute to 15 markets.

There are 12 districts which have 2 RAMs each falling under this class. These districts are Dehradun, Ghaziabad, Aligarh, Farrukhabad, Kheri, Unnao, Raebareli, Gorakhpur, Jaunpur, Mau, Varanasi, and Mirzapur. Thus, one district of the hill region, 2 of the western U.P. region, 4 of the central U.P. region and 5 of the eastern U.P. districts are included in this class. These districts contribute to a total of 24 RAMs.

Eight districts have three RAMs each. Amongst these districts are Muzaffarnagar, and Bijnor from western U.P. region, Etawah from the central U.P. region, and Gonda, Siddhartha Nagar, Maharajganj, Ballia, and Ghazipur from the eastern U.P. The eastern U.P. thus, has the largest share in this connection. These all districts have 24 such RAMs in all.

Six districts have 4 such RAMs each. These districts are Saharanpur, and Badaun in the western U.P, Sitapur in the central U.P., Fatehpur,

and Allahabad in the eastern U.P. and Banda in the Bundelkhand region. This part also contributes to the tune of 24 RAMs.

Again six districts falling in this class with 5 RAMs each are :Bullandshahr from the western U.P., Kanpur Dehat from the central U.P., Bahraich from the eastern U.P., Jhansi, Jalaun, and Hamirpur from the Bundelkhand region. There are 30 RAMs in all under this sub-class.

However, just one district i.e. Agra with 6 RAMs is also included in this class.

Thus, 123 RAMs in all are located in 48 districts which falls under this class. This is the biggest class in both the terms of the number of districts as also the number of RAMs.

II. Low Arrival or Annual Arrival 50,000 — 1,00,000 Metric Tonnes

This is the second smallest class in terms of volume as also in both the terms — the number of RAMs, and the number of districts. There are 42 districts which have 72 RAMs with the said volume of average annual total arrival of crops. The percentage of RAMs included in this class is 28.65. There are no such RAMs in 16 districts namely : Pithoragarh of the hill region, Ghaziabad, Rampur, Bareilly, Pilibhit of the western U.P., Kanpur Dehat, Lucknow of the central U.P. region, Bahraich, Gorakhpur, Jaunpur, Azamgarh, Mau, Allahabad, Varanasi, and Mirzapur of the eastern U.P. region, and Lalitpur of the Bundelkhand region.

There is just one district, Bullandshahr, which has 5 such RAMs, and just one district again, Gonda, which has just 4 such RAMs. Eight districts have three such RAMs each. These districts are : Meerut, Moradabad, Budaun, Etah, and Firozabad from the western U.P.,

Farrukhabad, Hardoi, and Raebareli from the central U.P. There are 24 RAMs which have been contributed by these 8 districts.

Seven districts — Saharanpur, Muzaffarnagar, Bijnor, and Aligarh from the western U.P., Sultanpur, and Deoria from the eastern U.P., and Hamirpur from the Bundelkhand region have 2 RAMs each. In all, 14 such RAMs are located in these districts.

Rest of the 25 districts have one such RAM each thus, with 25 such RAMs in all.

III. Medium Arrival or Annual Arrival 1,00,000 — 1,50,000 Meteric Tonnes

There are 16 districts : two — Dehradun, and Nainital from the hill region; eight — Hardwar, Muzaffarnagar, Bullandshahr, Bijnor, Moradabad, Budaun, Shahjahanpur, and Etah from the western U.P. region, three — Etawah, Sitapur, and Lucknow from the central U.P., one — Jaunpur — from the eastern U.P. region and two — Lalitpur, and Jalaun from the Bundelkhand region. There are 42 districts which do not have such RAMs. The rest twelve districts have one each. while four districts — Nainital, Bijnor, Moradabad, and Etawah — have two each such RAMs. Thus, there are 20 RAMs in all falling under this class. Thus, in terms of number of RAMs, this is the second smallest class following the next class with 1,50,000 - 2,00,000 metric tonnes crop arrival. The percentage of this class is 7.63 of the 257 markets.

IV. High Arrival or Crop Arrival 1,50,000 - 2,00,000 Metric Tonnes

This is the smallest class in terms of number of RAMs as also in terms of the number of districts too. There are only 12 RAMs located in 10 districts which are Nainital, Saharanpur, Moradabad, Raebareli, Pilibhit, Mathura, Kheri, Hardoi, Bahraich, and Faizabad. Out of these districts, only two districts — Raebareli, and Kheri — have two RAMs each,

while all the rest districts have just one RAM each. The percentage of the RAMs falling in this class is just 4.50.

V. Very High Arrival or Crop Arrival more than 2,00,000 Metric Tonnes

This class is third both in terms of the number of districts as well as the number of RAMs. There are 21 districts which have 30 such RAMs. There are 15 districts which have one RAM each, 5 districts with 2 RAMs each, while just one district with 5 RAMs. This class contributes to the tune of 11.52 per cent of the RAMs of the total. Nainital has five such RAMs. Ghaziabad, Bareilly, Pilibhit, Shahjahanpur, and Aligarh have two such RAMs each while all the rest — Saharanpur, Muzaffarnagar, Meerut, Moradabad, Agra, Mainpuri, Farrukhabad, Kanpur Nagar, Kheri, Sitapur, Lucknow, Barabanki, Gorakhpur, Allahabad, and Varanasi have just one RAM each.

6.2.6 TYPOLOGY BASED ON MARKETED SURPLUS

It is important to be clear about the difference between the marketable surplus and marketed surplus. According to the Mandi Parishad, U.P. (1997, p. 3) the marketable surplus is that amount of agricultural produce which is left (for sale) after deducting or saving the amount needed for the needs of the producer. In other words,

Marketable Surplus = Total Agricultural Production — The Amount kept by producer

On the other hand, the marketed surplus is that amount/part of the marketable surplus which is, actually, sold in the market. Thus, the volume of marketed surplus reflects on the personality of a market. Hence, this is also an important internal characteristic feature of markets. Keeping this in view, the typology on the basis of marketed surplus has been presented.

The marketed surplus of ten major crops of U.P. taken into consideration in this respect are : Rice, wheat, jowar, bazra, maize, barley, gram, arhar, masoor, and mustard. The observations show that the marketed surplus of the districts of the Uttar Pradesh varies from 0.88 to 1056.11 thousand metric tonnes (the smaller figure stands for Pauri Garhwal, while the latter figure stands for Nainital district). It is an interesting feature that both the minimum and the maximum limits of the range are presented by the hill districts. Further, another interesting characteristic of the hill region is that the five districts — Uttarkashi, Tehri Garhwal, Chamoli, Pithoragarh, and Almora — although have one RAM each but due to non-functioning of these RAMs, the marketed surpluses are nil in these districts. Hence, these five districts have not been included in the present typology. In other words, this typology has taken into account, the 58 districts of the state as also their respective RAMs totalling to 257.

As in most of the other cases, conveniently five classes have been made of the districts of which RAMs have marketed surplus of agricultural produce namely very low marketed surplus, low marketed surplus, medium marketed surplus, high marketed surplus, and very high marketed surplus. The marked limits of the volumes of marketed surpluses of these five classes are : Upto 50,000 metric tonnes; 50,000 - 1,00,000 metric tonnes; 1,00,000 - 1,50,000 metric tonnes; 1,50,000 - 2,00,000; and more than 2,00,000 metric tonnes. The details have been shown in Table 6.6 as also in Figure 20.

Table 6.6 : U.P. : Typology of RAMs Based on Marketed Surplus

No. of RAMs	Marketed Surplus ('000 metric tonnes)											
Sub-Class	Upto 50		50 - 100		100 - 150		150 - 200		More than 200		Total RAMs	
	ND	NR	ND	NR	ND	NR	ND	NR	ND	NR	No.	%
1 RAM	4	4	1	1	-	-	-	-	-	-	5	5
2 RAMs	5	10	2	4	-	-	-	-	-	-	7	14
3 RAMs	4	12	1	3	3	9	1	3	3	9	12	36
4 RAMs	5	20	1	4	1	4	-	-	1	4	8	32
5 RAMs	-	-	3	15	2	10	1	5	1	5	7	35
6 RAMs	1	6	2	12	-	-	2	12	2	12	7	42
7 RAMs	2	14	2	14	-	-	2	14	1	7	7	49
8 RAMs	1	8	-	-	1	8	-	-	1	8	3	24
9 RAMs	-	-	-	-	-	-	-	-	1	9	1	9
10 RAMs	-	-	-	-	-	-	-	-	-	-	-	-
11 RAMs	-	-	-	-	-	-	1	11	-	-	1	11
Total	22	74	12	53	7	31	7	45	10	54	58	257
Percentage	-	28.78	-	20.23	-	12.06	-	17.52	-	21.01	-	100

ND = Number of Districts; NR = Number of RAMs. Data for Uttarkashi, Tehri Garhwal, Chamoli, Pithoragarh, and Almora are not available.

The details of the various classes are as follows :

I. Very Low Marketed Surplus or Surplus upto 50,000 Metric Tonnes

This is the smallest class of this series in terms of the volume of marketed surplus. There are 22 districts which have the RAMs of whose marketed surplus have been observed to be falling in this class. Out of these districts, Dehradun and Pauri Garhwal belong to the hill region of which Pauri Garhwal has one RAM. The marketed surpluses of these districts are 6.32 and 0.88 thousand metric tonnes respectively. Six districts of this class are located in the western U.P. region. These districts are Hardwar, Muzaffarnagar, Ghaziabad, Bijnor, Agra, and Firozabad. The numbers of these districts are 3, 7, 4, 7, 8, and 4 respectively. While the volumes of the marketed surpluses are 27.38, 20.30, 30.60, 28.90, 31.16, and 33. 23 thousand metric tonnes respectively. The two districts, Kanpur Nagar and Lucknow, falling in this class belong to the central U.P. region. The number of RAMs and their respective market surpluses are 1 (6.59 thousand metric tonnes) and 2 (45.48 thousand metric tonnes). However, there is just one district, Jhansi, with 6 RAMs and 42.50 thousand metric tonnes of marketed surplus. All the rest, 11 districts are from the eastern U.P. region. Thus, there are as many as half of the total number of districts of this class from the eastern U.P. region. These districts are Gorakhpur, Deoria, Jaunpur, Azamgarh, Mau, Ballia, Pratapgarh, Varanasi, Ghazipur, Mirzapur, and Sonbhadra. These districts have the RAMs and the respective marketed surplus in thousand metric tonnes as 3 (40.66), 2 (6.99), 3 (9.24), 1 (1.37), 2 (2.04), 4(15.25), 1(27.22), 3(22.70), 4(16.23), 2(8.96), and 2(17.38). This clearly shows that the shares of individual districts of the western U.P. region are more than the eastern U.P. region excepting, ofcourse, Gorakhpur district. In this class, Pauri Garhwal, has the least/smallest volume of the marketed surplus, i.e. 0.88 thousand metric tonnes while Lucknow i is the highest/largest volume, i.e. 45.48 thousand metric tonne. The percentage of the RAMs under this class stands at 28.78.

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
TYPOLOGY BASED ON
MARKETED SURPLUS

Fig. 20
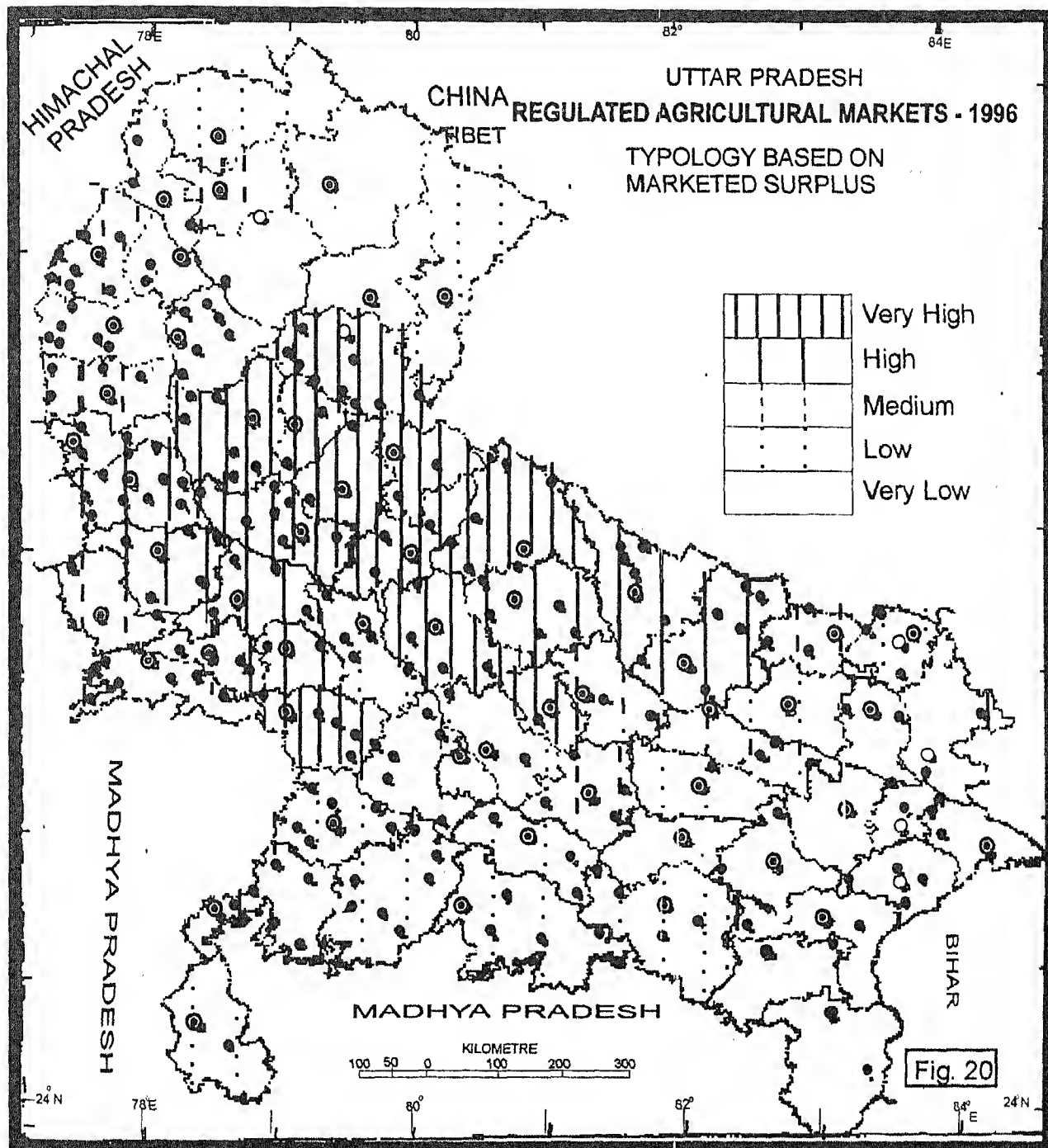
II. Low Marketed Surplus or Surplus : 50,000 — 1,00,000 Metric Tonnes

This is the second class in the series as also the second largest in terms of number of districts but third largest in terms of the number of RAMs. In this class, there are 53 RAMs which are located in 12 districts of the state namely, Farrukhabad, Kanpur Dehat, Unnao, Sultanpur, Basti, Maharajganj, Fatehpur, Allahabad, Lalitpur, Jalaun, Hamirpur, and Banda. The volumes of marketed surplus in thousand metric tonnes and number of RAMs of these districts shown in brackets respectively are : 69.94 (6), 86.20 (6), 70.90 (3), 91.19(2), 66.64(1), 96.37 (4), 70.07 (5), 55.55 (5), 51.34 (2), 73.14(7), 85.00(7) and 93.43 (5). The first three districts fall in the central U.P. region, the last four districts belong to the Bundelkhand region, while all the rest five districts are located in the eastern U.P. region. In this class, Lalitpur has the least/smallest volume i.e. 51.34 thousand metric tonnes while Banda has the highest/largest volume i.e. 93.43 thousand metric tonnes. Interestingly, both the districts are located in the Bundelkhand region only. The percentage of RAMs in this class comes to 20.23.

III. Medium Marketed Surplus or Surplus : 1,00,000 — 1,50,000 Metric Tonnes

This is the third class of the series. It has the smallest number of the districts with smallest number of RAMs too. There are only 7 districts as also only 31 RAMs. These districts with marketed surpluses and number of RAMs are Saharanpur (129.65/8), Meerut (113.13/5), and Mathura(110.82/3) from the western region. One district Raebareli (102.11/5) is from the central U.P. region. While three districts — Barabanki (123.69/3), Faizabad (119.15/3), and Siddharthanagar (104.64/4) — are from the eastern part of U.P. Amongst these districts, Raebareli has the least/smallest volume of the marketed surplus i.e,

102.11 thousand metric tonnes while Saharanpur district has the highest/largest volume of the marketed surplus standing at 129.65 thousand metric tonnes. This class has 12.06 percent of the total number of RAMs of the state.

IV. High Marketed Surplus or Surplus : 1,50,000 — 2,00,000 Metric Tonnes

This class consist of only 7 districts which have 45 RAMs with the marketed surplus under the present range. Out of these districts are Bullandshahr, Aligarh, Etah, and Mainpuri from the western U.P., Sitapur from the central U.P., while Bahraich, and Gonda from the eastern U.P. region U.P. The volumes of the marketed surpluses in thousand metric tonnes and the number of RAMs of the respective districts of the western U.P. region are 170.97 (11), 199.54 (6), 150.27 (5), and 162.91 (3). The figures for Sitapur district are 176.50 and 7. These figures for the eastern U.P. districts are 176.97 (6), and 183.57(7) respectively. Thus, while Etah has the least/smallest marketed surplus i.e. only 150.27 thousand metric tonnes, Aligarh has the highest/largest marketed surplus as 199.54 thousand metric tonnes. These are the two minimum and the maximum volumes of marketed surpluses of this class. The share in terms of percentage of the RAMs of this class is 17.52.

V. Very High Marketed Surplus or Surplus More than 2,00,000 Metric Tonnes

This is the last class of the series and it has 10 districts namely, Nainital, Moradabad, Rampur, Budaun, Bareilly, Pilibhit, Shahjahanpur, Etawah, Kheri, and Hardoi. Thus, while the first district is from the hill region, the last three districts from the central U.P. region, while the rest 6 districts are from the western U.P. region. This is important to note that although this class has the third highest number of districts,

10, the number of RAMs second in the order, 54. Another important feature of this class is that the variation in volumes of the marketed surplus of various districts is also too large which is clearly exhibited from the following : 236.29 (Moradabad) to 1056.11 (Nainital) thousand metric tonnes — the variation is extra-ordinarily large. The number of RAMs also in various districts varies from 3 to 9. The volume of marketed surplus in thousand metric tonnes and the number of RAMs of the districts are respectively as : 1056.11(9), 236.29(7), 289.63(3), 248.13(8), 610.12(3), 395.72(3), 804.50(4), 219.16(6), 436.48(5), and 249.38(5). The percentage of the RAMs falling under this class is 21.01.

7. HIERARCHY

7.1 INTRODUCTION

The nodes or points on the surface i.e. area/region have a general size-system under which they occur. The study of hierarchical system of nodes — cities, settlements, markets — is an important aspect of the spatial analysis of nodes. All the nodes differ from each other in size and that these can be divided into some tiers or classes in any regional set up. It must be pointed out that such a type or classification is entirely different from a study on general classification or typology. Typology presents the classes on the basis of various parameters/grounds related to the salient features of the nodes while the hierarchical classes are the total size classes — taking into account the various parameters affecting the total personality of the points. Although, the descriptive terms like hamlet, village, town, city, and metropolis have been generally used for settlement sizes, the markets themselves also can be categorised into various tiers or size classes. The 'Central Place Theory' relating to number, size, spacing and arrangement of central places either urban (Clark, 1968, p. 386) or rural (Singh, 1968, pp. 1-2) in character has been much in discussion with the disciplines of geography and allied sciences. Mark Jafferson (1931, p. 453) used the term 'Central Place' for a settlement which is the focus of at least one or more economic and/or social activities of its surrounding area. The market nodes are a quite appropriate aspect to receive the attention of researchers. After the classical theory of Walter Christaller (1933), and mainly after the second world war, this term has been widely used. Always, the larger nodes are functionally more complex than the smaller ones, and the functional complexity is, in fact, related to the total size of the node and its complementary region (Reilly, 1929).

7.2 OBJECTIVE

The objective of the present effort is to enquire into the centrality of RAMs and to develop their hierarchical tiers/orders or size classes. It is to be mentioned, specifically, that no study of regulated agricultural markets — RAMs — of U.P. with regard to hierarchical orders has provided the spatial analysis at length as yet.

7.3 METHODOLOGY

An analysis of the particular characteristic features which add a lion's share to the total size of regulated agricultural markets of the study region is an imperative prelude. This part, hence, is concerned with the development of a device related to the problem of differentiation of broad tiers/size classes of the regulated agricultural markets based on the composite/aggregate score. There are various factors which individually do affect the total size of a RAM — the node-size — as it contributes in a big way towards its significance, the character, the personality — the hierarchical class. After an indepth study of the parameters causative to determine the tiers of the RAMs of U.P., 8 have been taken into account. Dixit in his two studies (1984, pp. 123 —137; and 1988, p. 134- 188), has made such efforts but not in case of regulated agricultural markets. Nevertheless, the parameters which have been considered by him have a great role to play in building the total size of any market centre.

The following are the said causative parameters taken into consideration in the process of developing a device to present the hierarchical orders :

(i) Nature of market site, (ii) Major modern facilities (iii) Number and nature of sub-yards, (iv) Periodicity, (v) Market-settlement population (vi) Average road-length, (vii) Market fee, and (viii) Volume of crop arrival to the market .

The study of Regulated Agricultural Markets (RAMs) is different from the traditional markets in many ways .... In RAMs, the K = 3 or any other principle

does not apply as these markets are developed under a policy of the government while the K = 3 system has a natural base. Yet, to some extent, it has been compared with the present case.

7.3.1 CAUSATIVE PARAMETERS

I. Nature of Market Site

The market site is the actual 'place' where market sittings take place or where actually the market is held. This is known as a market place in case of a general periodic and/or daily market while in case of a regulated agricultural market (with new/planned construction), it is known as mandi yard. All the regulated agricultural markets under their respective market committees formed for the purpose. New buildings with various basic necessary facilities for market functionaries, especially for the producer-farmer/seller are made available. Hence, the conventional/traditional markets which function from old, conjusted, unplanned site, certainly have less attraction in comparison to those which work at the newly planned sites equipped with modern facilities. This criterion, thus, plays an important role in raising the status of the market on the one hand while helping the general development of the area where it is located on the other.

II. Major Modern Facilities

Although, all the new market sites are provided with a number of basic or infra-structural facilities for market functionaries specially the farmers, and all the new sites are constructed on the basis of approved layouts of the market yards, yet there are certain advanced and higher types of modern facilities provided to the farmers such as, the facility of grading units, and the facility of Kisan Bazar at the market yards.

The grading facility is provided to farmers to get their agricultural produce graded objectively. This helps the farmers in getting the reasonable and due

cost of their produce without any favour to the traders. This way, the various crops are listed under standard grades.

Similarly, the Kisan Bazar is also a very significant facility which is made available at the planned/new market sites. This bazar is meant for the farmers. Generally, when the farmers finish up the process of sale of their produce after getting the payment they go to other markets for purchasing the items/goods for their farming process such as agricultural implements, standard variety of seeds, pesticides, insecticides, etc. The Mandi Parishad at some new market yards has provided with these commodities available at reasonable prices for the farmers. Thus, this way the farmers save their time, money, as well as energy also. There are certain markets which have one modern facility, while there are certain markets which have two modern facilities. However, there are some markets which have no facilities at all. Thus, the one which has one facility, in general, is bigger than the other one which has none. The market which has both the above mentioned facilities is certainly much bigger than the other markets.

III. Number and Nature of Sub-Yards

The RAMs generally, have some sub-yards attached to them falling under the market areas of their respective main or the primary markets, The sub-mandis are established by the government in view of the needs of the area. Hence, it is obvious that, a RAM of high number of sub-yards attached with it is a bigger RAM than the one which has just one sub-yard or none attached with the same. Thus, the existence of the sub-yards is also an important characteristic feature of the RAMs. In addition, the nature of sub-yards is also an important aspect. In case the sub-yard, too, has a new or a planned/developed market site after approval of a modern layout then it becomes more significant.

IV. Periodicity

Market periodicity is one among the various significant factors of internal characteristics of a RAM. It is taken in terms of a week. In case, a market

meets once a week, the periodicity of this market is weekly, likewise there may be bi-weekly, tri-weekly .... and daily RAMs. It is obvious that a daily market does a lot of business in comparison to any weekly market. Thus, the higher the periodicity, the higher the size of a market, is a general rule. Hence, this criterion has also been taken into account in the present context.

V. Market-Settlement Population

Population is a very dominant factor with regard to any cultural elements. In the development of character and personality of a RAM, population, like the factors already mentioned, plays a significant role. The population of a centre in which a RAM is located has an effective bearing on the importance of the market. In general, the population and the size of the market have a positive relationship, meaning thereby that higher the population of the market, the higher the status of a market and vice-versa. Thus, more the complex and varied the functions of a market, the higher attractive power and the ambit of interaction the higher the status. However, all the population figures considered here, relate to 1991 Census only.

VI. Average Road-Length

The farmers need proper roads for bringing their agricultural produce to the mandi. Here it must be mentioned that, railways do not play much role in this connection. Rather, the farmers for want of their convenience, prefer to take the road transport for the said purpose. Generally, it is said that the railways polarise the system while the roads decentralize it. The role of road-length in case of development of an area and/or market and its market place is undoubtedly high. Oppen, Parathasarathy, Rao (1985, pp. 150 – 168) have clearly shown that roads and regulated markets have positive relationship. The development and the lengths of roads are directly/positively related to each other. Hence, higher the average road-length, higher the status of market and vice-versa. Thus, this aspect is also being taken up in present case as it has a great bearing on the character or personality — the total size

— of a market. However, it must be mentioned that the road-length calculated in the present case is per 100 km^2 area.

VII. Market Fee

The market fee is collected at every RAM, the amount of this fee directly reflects on the internal characteristic of a market. Like, the characteristic features mentioned above, this factor is also directly related, to the total size of a market, i.e., the higher the collection of fee at a market, the higher the status of the market and vice-versa. In the present case, the annual fee collected by market committee has been taken into consideration.

VIII. Crop Arrivals

Volume of crop arrivals for sale is also a significant factor deciding the character/total personality of a market. In conformity with the above mentioned parameters, the total size of a market is directly related to this parameter also, i.e., more the volume of arrival to the market the bigger the size of market.

One very important point to mention at this moment is that the arrival aspect of the market is rather very significant one as the RAM itself is meant, primarily, for the farmer's 'agricultural produce for sale at the most competitive rate.' Hence, it has been decided not to consider just one year arrival, rather, the annual arrivals of 1992-93, 1993-94, and 1994-95 have been taken for the total and further the average annual arrival of these three years has been considered in the present case.

7.3.2 WEIGHTAGE SCHEME

It is clear from the above that all the eight factors have, in general, direct or positive relationship with the general size of a market.

It must be remembered that the above statement is a logical generalization and there may exist differences in the gravitation pull of a market or in other

words the total size of a market due to the differences in the extent to which a particular parameter leaves its impact on the market. In this context, the absolute nature of parameter has its own significance. For example, the size of RAM with a sub-yard — even with an ordinary one would be in general bigger than the one which is without a sub-yard. Further, the market with two or three sub-yards would be much bigger than the one which has just one sub-yard. Still further, a market with sub-yards equipped with various basic facilities would still be much bigger than the one which has just ordinary sub-yards. Thus, it is crystal clear that the differences in the nature of the parameters leaving impact on various markets, result in differences in total sizes of the RAMs in question. Hence, the greater the intensity of the nature of the parameter, greater the impact on the market in question. In view of this, a detailed weightage scheme has been drawn taking into account all the above eight parameters. The maximum weightage of 'one' has been allotted to eah parameter (in full/total form). The various forms of a particular parameter have, thus, different weights — the maximum being one. All the necessary details of the weightage scheme have been demonstrated through Table 7.1.

Table 7.1 : Hierarchy — Weightage Scheme

Parameter	Nature of Parameter	Weight
(i) Nature of Market Site	Old/Ordinary	0.50
	New	1.00
(ii) Major Modern Facilities	No Facilities	0.00
	One Facility	0.50
	Two Facilities	1.00
(iii) Number and Nature of Sub-Yards	One Ordinary Sub-Yard	0.20
	Two Ordinary/One New Sub-Yard	0.40
	3 - 4 Ordinary/Two New Sub-Yards	0.60
	5 - 6 Ordinary/Three New Sub-Yards	0.80
	More Than 6 And/Or More Than Three New Sub-Yards	1.00
(iv) Periodicity	Once	0.20
	Twice	0.40
	More than twice but not daily	0.80
	Daily	1.00
(v) Market Settlement Population	Upto 10,000	0.20
	10,000 - 20,000	0.40
	20,000 - 50,000	0.60
	50,000 - 1,00,000	0.80
	More than 1,00,000	1.00
(vi) Average Road-Length	Upto 15 km	0.20
	15 - 30 km	0.40
	30 - 45 km	0.60
	45 - 60 km	0.80
	More than 60 km	1.00
(vii) Annual Market fee	Upto Rs. 20,00,000	0.25
	Rs. 20,00,000 - 40,00,000	0.50
	Rs. 40,00,000 - 80,00,000	0.75
	More than Rs. 80,00,000	1.00
(viii) Volume of Arrivals	Upto 50,000 metric tonnes	0.20
	50,000 - 1,00,000 metric tonnes	0.40
	1,00,000 - 1,50,000 metric tonnes	0.60
	1,50,000 - 2,00,000 metric tonnes	0.80
	More than 2,00,000 metric tonnes	1.00

7.3.3 COMPOSITE/CENTRALITY INDEX

The total or the maximum score for all the eight parameters together comes to 8. The weightage has been considered simultaneously for each market and a composite picture of each has been derived by adding up the weights allotted

to various forms of various parameters. Further processing of the measurement of the centrality of the RAM has been completed in all the cases of RAMs.

The centrality of a RAM has been calculated as given below :

$$Ci = \frac{Os}{Ms} \times 100$$

where :

Ci = Composite/Centrality Index

Os = Observed Score or weight of a RAM and

Ms = Maximum possible score/weight in the process

7.4 HIERARCHY

7.4.1 HIERARCHICAL TIERS/ORDERS — IDENTIFIED

Following the given formulation for measuring the Centrality/Composite Index, the indices of all the RAMs have been calculated. The full range of index is 0 - 100. The Centrality/Composite Index values as also the hierarchical orders of all the RAMs of U.P. have been given in Appendix 3.

Here, it is important to mention that when the 262 RAMs were plotted with their respective CI's, instead of four or five distinct orders of the hierarchical tiers, only three orders have been clearly noted which seems quite rational too, (Figure 21) in view of the marketing of agricultural produce taking place at the periodic markets, as also the sub-mandi yards - the subsidiary markets. In case these two — level — markets are also taken into account then, there emerge five different levels — the lowest one of the periodic markets, the second lowest of the subsidiary mandi yards, and upper three levels of the

UTTAR PRADESH : REGULATED AGRICULTURAL MARKETS

HIERARCHICAL TIERS

FIRST

SECOND

THIRD

C. INDEX VALUE
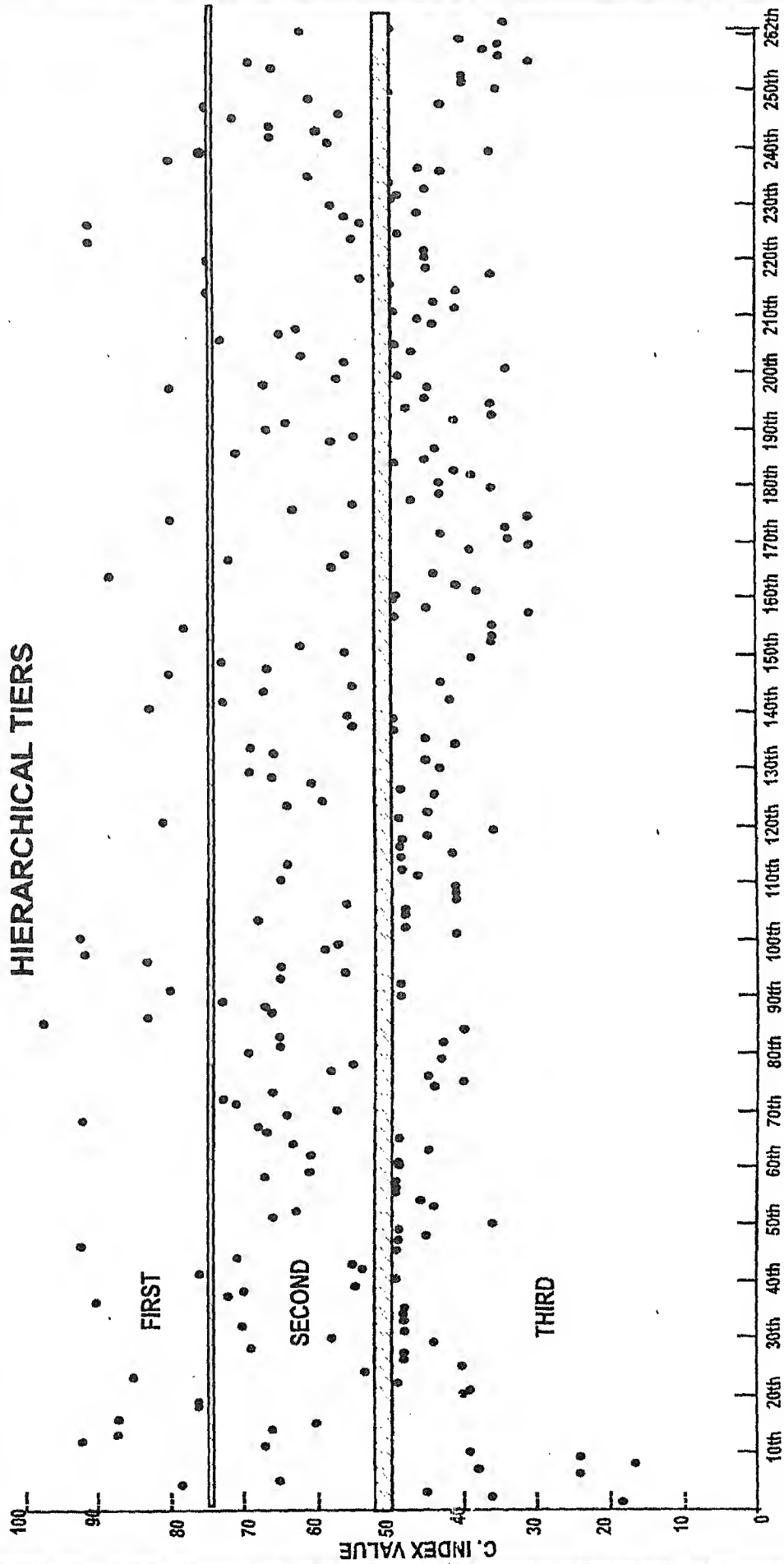
REGULATED AGRICULTURAL MARKET SERIES (1–262)

Fig. 21

main/ primary RAMs. Ibrahim (1984, pp. 243-273) has also identified only three orders of RAMs in his study. Total number of the main/ primary RAMs is 262 while that of subsidiary RAMs is 381 in the entire state of U.P.

The three tiers distinctly observed in the study are as follows :

I First order RAMs : C I Value above 75,

II Second order RAMs : C I Value 50 - 75, and

III Third order RAMs : C I Value upto 50.

The details of these orders of RAMs have been shown through Table 7.2.

Table 7.2 :U.P. : Hierarchical Orders of RAMs

I. General

Orders	RAM - Districts	No. of Districts	No. of RAMs	Total RAMs /Districts	Percentage of RAMs
I First	1	22	22		
	2	1	2		
	6	1	6	30/24	11.45
II Second	1	15	15		
	2	15	30		
	3	6	18		
	4	7	28		
	5	1	5	96/44	36.64
III Third	1	22	22		
	2	10	20		
	3	8	24		
	4	8	32		
	5	1	5		
	6	4	26		
	9	1	9	136/54	59.91
Three Orders				262/63	100

II. Divisionwise

Division	I Order	II Order	III Order	Total RAMs
1. Garhwal	1	1	6	8
2. Kumaon	6	3	2	11
3. Meerut	4	12	22	38
4. Moradabad	1	11	5	17
5. Bareilly	3	8	7	18
6. Agra	4	9	16	29
7. Kanpur	1	9	9	19
8. Lucknow	3	10	15	28
9. Faizabad	1	7	13	21
10. Gorakhpur	1	4	9	14
11. Azamgarh	1	3	6	10
12. Allahabad	1	3	7	11
13. Varanasi	1	4	6	11
14. Jhansi	2	11	13	27
Total	**30**	**96**	**136**	**262**

Order List

The map of U.P., Figure 22, shows clearly the RAMs of various orders of the state. The following list includes the RAMs and the various districts of various hierarchical orders :

I First Order (24 districts/ 30 RAMs) :

The Districts with one RAM each : Dehradun, Saharanpur, Muzaffarnagar, Meerut, Ghaziabad, Moradabad, Bareilly, Pilibhit, Shahjahanpur, Mathura, Mainpuri, Kanpur Nagar, Kheri, Sitapur, Lucknow, Bahraich, Gorakhpur, Allahabad, Varanasi, Lalitpur, and Jhansi (thus, 22 districts/22 RAMs).

The District with two RAMs : Aligarh (thus, 1 district/2 RAMs).

The District with six RAMs : Nainital (thus, 1 district/6 RAMs)

II Second Order (44 districts/96 RAMs) :

The Districts with one RAM each : Dehradun, Saharanpur, Bareilly, Shahjahanpur, Mathura, Gonda, Basti, Deoria, Azamgarh, Fatehpur, Pratapgarh, Allahabad, Ghazipur, Sonbhadra, and Banda (thus, 15 districts/15 RAMs).

The Districts with two RAMs each : Hardwar, Muzzafarnagar, Ghaziabad, Bullandshahr, Rampur, Pilibhit, Agra, Etah, Kanpur Dehat, Barabanki, Faizabad, Sultanpur, Maharajganj, Jaunpur, and Varanasi (thus, 15 districts/30 RAMs).

The Districts with three RAMs each : Nainital, Meerut, Etawah, Kheri, Raebareli, and Hamirpur. (thus, 6 districts/18 RAMs).

The Districts with four RAMs each : Bijnor, Budaun, Aligarh, Farrukhabad, Hardoi, Jhansi, and Jalaun (thus 7 districts/28 RAMs).

The District with five RAMs : Moradabad (thus, 1 district/5 RAMs).

III Third Order (54 districts/136 RAMs)

The Districts with one RAM each : Uttarkashi, Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, Almora, Hardwar, Meerut, Ghaziabad, Moradabad, Rampur, Bareilly, Mathura, Hardoi, Lucknow, Barabanki, Faizabad, Deoria, Jaunpur, Sonbhadra, Lalitpur, and Jhansi (thus, 22 districts/22 RAMs).

The Districts with two RAMs each : Dehradun, Shahjahan, Mainpuri, Farrukhabad, Kheri, Raebareli, Gorakhpur, Maharajganj, Mau, and Mirzapur (thus, 10 districts/20 RAMs).

The Districts with three RAMs each : Bijnor, Etah, Etawah, Unnao, Ballia, Allahabad, Ghazipur, and Jalaun (thus, 8 districts/24 RAMs).

The Districts with four RAMs each : Muzzafarnagar, Budaun, Ferozabad Kanpur, Dehat, Siddharthnagar, Fatehpur, Hamirpur, and Banda (thus, 8 districts/32 RAMs).

The District with five RAMs : Bahraich (thus 1 district/ 5 RAMs)

The Districts with six RAMs : Saharanpur, Agra, Sitapur, and Gonda (thus, 4 districts/24 RAMs).

The District with nine RAMs : Bullandshahr (thus, 1 district and nine RAMs).

The observations at the division level reveal that the highest number of first, second, and third order RAMs are found respectively in Kumaon (6), Meerut, and Jhansi (12 each), and Meerut (22). There are eight divisions — Garhwal, Moradabad, Kanpur, Faizabad, Gorakhpur, Azamgarh, Allahabad, and Varanasi — which have just one first order RAM each. In case of second order RAMs, it is only the Garhwal division which has just one RAM while in case of third order RAMs, the minimum number of two RAMs is observed in Kumaon division.

The district level observations show that there are 30 first order RAMs which are located in 24 districts; 96 second order RAMs located in 44 districts; and 136 third order RAMs located in 54 districts.

There are 9 districts — Nainital, Pilibhit, Aligarh, Kanpur Nagar, Sultanpur, Basti, Azamgarh, Pratapgarh, and Varanasi — which have no third order RAMs, although, these are of the lowest order, small RAMs as also these are in abundance. All the districts of only four divisions — Meerut, Moradabad, Bareilly , Allahabad, — have the second order RAMs.

There are ten districts — Uttarkashi, Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, Almora, Kanpur Nagar, Basti, Azamgarh, Pratapgarh — which

are just one RAM districts and hence only one order of RAMs is found in each of these.

Two RAM — districts, seven in number — Lucknow, Sultanpur, Deoria, Mau, Mirzapur, Sonbhadra, and Lalitpur — obviously, do not have all the three orders of RAMs. Rather, Lucknow lacks in second order RAMs, Sultanpur in first and third order RAMs, Deoria in first order RAMs, Mau in first and second order· RAMs, Mirzapur in first and second order RAMs, Sonbhadra in first order RAMs, and Lalitpur in second order RAMs.

Only 24 districts have the first order RAMs and out of these, just one, Nainital, has six; Aligarh has two and all the rest 22 districts have one RAM each of this order.

Bullandshahr, although has 11 markets, the highest number in the entire state, yet it has no first order RAM as also it has only two second order RAMs too, thus all the rest, 9, RAMs are of the third order.

Nainital District has the second largest number of RAMs, 9 , in the entire state. It has six first order RAMs and the remaining three RAMs are of the second order. There are no third order RAMs in this district.

In case of, numbers of RAMs in districts, Sahranpur, Budaun, and Agra stand third with 8 RAMs each. Amongst these Saharanpur, has 6 third order RAMs, and 1 RAM each in second and first order. Budaun has four RAMs each in second and third order while, Agra has six RAMs in third and 2 RAMs in second order. Despite, having the third highest number of RAMs i.e. eight RAMs each, the districts of Budaun and Agra have no first order RAMs. All the details in this connection have been shown through Appendix 3.

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
HIERARCHICAL ORDERS

● First Order
○ Second Order
○ Third Order

Fig. 22
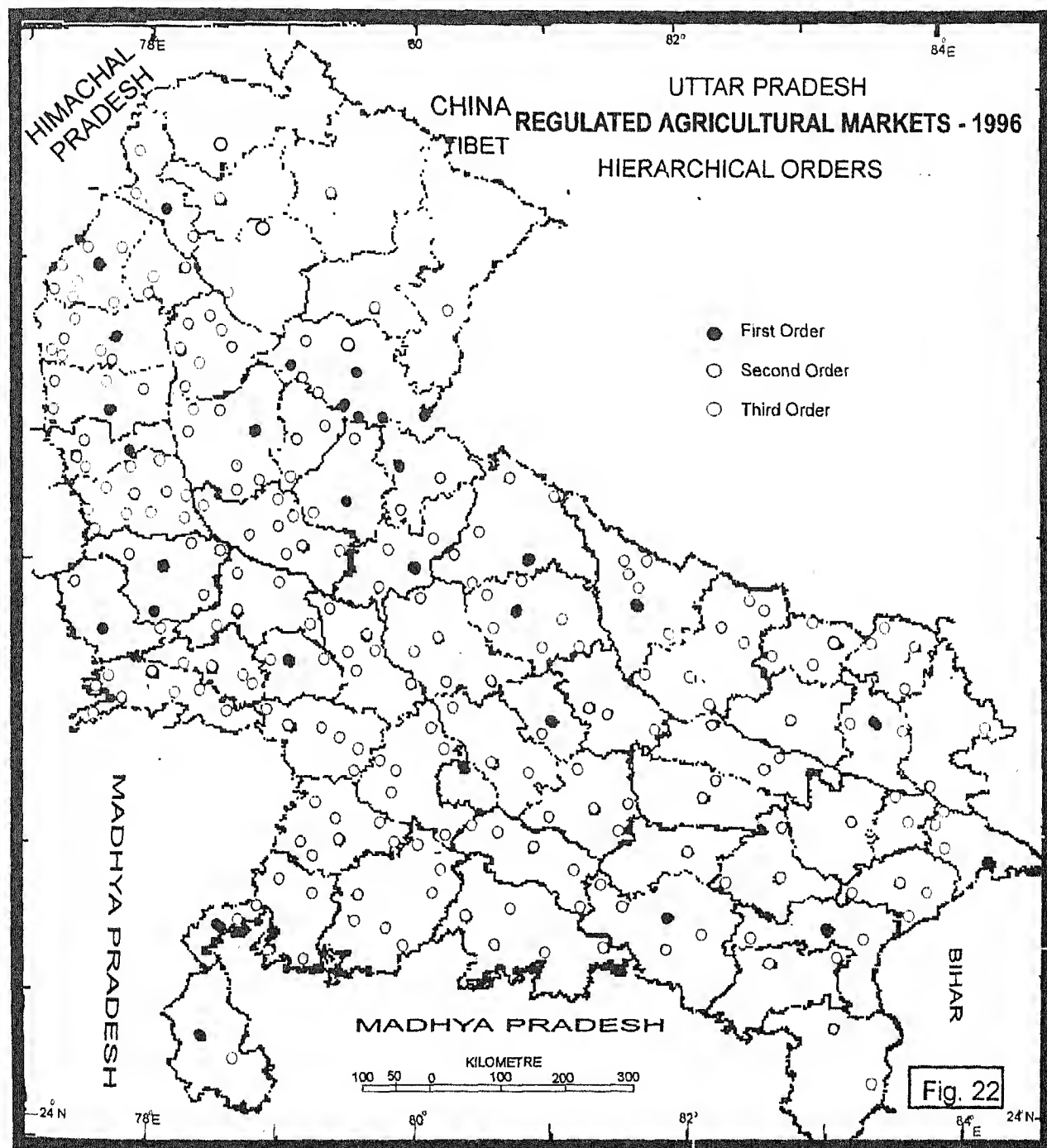
7.4.2 HIERARCHICAL TIERS/ORDERS — ANALYSED

I. First Order RAMs

The first order RAMs have their C I values above 75 each (Figure 23). Under this, on an average, above 0.60 is the score received for every parameter out of the specified ones in the schedule. Thus, such a RAM again, on an average, has at least a new market site, two modern facilities in addition to all the basic amenities made available at the new mandi yards, and/or three sub-yards with new sites, at least five times a week market periodicity if not daily, the population of the market settlement should be more than 50, 000, the road-length more than 45 km per 100 km^2 area, more than Rs. 40,00,000 as the annual market fee collected, and more than 1,50,000 metric tonnes of annual arrival of various crops at the RAM. As per the U.P. Mandi Parishad classification, generally all of these RAMs are of A Special class. Thus, these are the general conditions which should be proven for a RAM to have achieved the first order status. Generally, every RAM has urban agglomeration, or municipal corporation/board status.

In the entire state, the number of first order RAMs is 30, as against the total of 262 RAMs. Out of the 30 first order RAMs, at the regional level the RAMs are as : hills 7, western U.P. 12, central U.P. 4, eastern U.P. 5, and Bundelkhand 2.

There are 24 districts which have such RAMs in the state. Two districts, Aligarh, and Nainital have more than one such RAM each while 22 districts have just one RAM each. These 22 districts are : one district i.e., Dehradun, from U.P. Hill region; two districts i.e., Lalitpur, Jhansi from the Bundelkhand region; five districts i.e., Bahraich, Gorakhpur, Allahabad, Varanasi, and Ballia from the eastern U.P. region; four districts i.e. Kanpur Nagar, Kheri, Sitapur, and Lucknow of the central U.P. region, ten districts i.e Saharanpur, Muzaffarnagar, Meerut, Ghaziabad, Moradabad, Bareilly, Pilibhit,

UTTAR PRADESH :
REGULATED AGRICULTURAL MARKETS
First Order : Ranking

```
                                    ┬ 100.00  C.I. VALUE

                                    ┼ 99.00

                                    ┼ 98.00
1.................. Bareilly ---
                                    ┼ 97.00

                                    ┼ 96.00

                                    ┼ 95.00

                                    ┼ 94.00

                                    ┼ 93.00
2.....Haldwani,  Mathura ------ Moradabad, Hapur,
                                    ┼ 92.00
3......Allahabad, Hathras --- ┬ 91.00 Varanasi,

4............ Muzaffarnagar -- ┼ 90.00

                                    ┼ 89.00
5.................. Lucknow ----
                                    ┼ 88.00
6.....Rudrapur, Kashipur ----
                                    ┼ 87.00

                                    ┼ 86.00

7................Saharanpur ----┼ 85.00

8............... Pilibhit ----┬ 84.00
9..........Aligarh----------------Kanpur,
                                    ┼ 83.00

                                    ┼ 82.00

10.................... Manpuri ---- ┼ 81.00

11.Bahraich, Gorakhpur -----80.00---Lalitpur, Shahjahanpur,Lakhimpur,

12.................... Sitapur --- ┼ 79.00
13.................Dehradun----┼ 78.00

                                    ┼ 77.00.
14.....Khatima, Sitarganj ---- 
                                    ┼ 77.00
15.................... Jhansi ---┼ 76.00
16.............................--- Kichha
17..........Meerut, Ballia --┼ 75.00  C.I. VALUE
```

Fig. 23

Shahjahanpur, Mathura, and Mainpuri are from the western U.P. region. Aligarh has two first order RAMs and Nainital has six such RAMs. Six first order RAMs have been illustrate through diagrammatic sizes (Figure 24).

There are 14 administrative divisions of the state with 30 first order RAMs on an average roughly 2 first order RAMs are there in each administrative division. The divisionwise details of these first order RAMs have been given below :

I. Garhwal Division

The Garhwal Division has five districts — Uttarkashi, Dehradun, Tehri Garhwal, Pauri Garhwal, and Chamoli and that there are eight RAMs in all in these districts. This is the smallest number of RAMs amongst all the divisions of the state and only one first order RAM is located in this division.

In the entire Garhwal division, there are no first order RAMs other than the one located in Dehradun district. Dehradun district has four RAMs out of which Dehradun is of first order. The district headquarter is also located at Dehradun city. The average road-length of the district is 46.60 km per 100 km^2 area. The average marketable surplus of the district is 13.75 thousand metric tonnes while the annual marketed surplus of the same is 32,000 metric tonnes. The RAM of Dehradun has C I value of 78.12. It has a new market yard. Although, grading unit is not available but Kisan Bazar does exist there in the yard. There are two sub-yards — Doiwala, and Mussoorie. However, both of these yards have no new sites, thus they hold their market meetings at their old/conventional sites only. The Dehradun RAM is a daily market and this has six meetings in a week. The weekly closure of the RAM is on Sunday, the market settlement has a population of 3,68,053 and the urban status of the settlement is that of an urban agglomeration. The market fee collected annually is between Rs. 40,00,000 and Rs. 80,00,000. The U.P. Mandi Parishad has classified this market as A class market. The average annual crop arrival is 172 thousand metric tonnes.

II. Kumaon Division

(i) Nainital District

There are no first order markets in any district other than the Nainital district which has as high as six RAMs of this order. The Kumaon division has three districts — Pithoragarh, Almora, and Nainital, and the number of RAMs in this division is 11. Out of these, six are of the first order — all of these are locate in Nainital district — the highest number of first order RAMs in a district in the state. These first order RAMs with their respective C I values are : Haldwani (92.50), Kashipur (87.50), Rudrapur (87.50), Kitchha (75.37), Sitarganj (76.87), and Khatima (76.87). The district has on an average 43.93 per 100 km^2 road-length. The annual marketable and annual marketed surpluses of the district are 433.98 thousand metric tonnes, and 1056.11 thousand metric tonnes respectively. Out of six first order RAMs, three have A Specialclass, and the other three have A class of the U.P. Mandi Parishad classification.

Haldwani has the highest C I value amongst all the above mentioned RAMs. This RAM has a new mandi site, and both the modern facilities — grading machine and Kisan Bazar. Thus, the Kisan Bazar has also been established for the benefit of farmers at this mandi. There are as many as five sub-yards — Mukhani, Lamachaur Khas, Lalkuan, Bhowali, and Kaladhundi. The Haldwani is a daily RAM and it remains closed on every Saturday. The weekly openings of the market, thus, are six. The market settlement's urban status is that of a municipal board. The population of the settlement is 1,04,195. It has been categorised by U.P. Mandi Parishad as A Special class mandi. The average annual crop arrival of the years, 1992-93, 1993-94, 1994-95 is 5,60,000 metric tonnes which is considerably a high volume in entire U.P. The annually collected market fee by its market committee is more than Rs. 80,00,000.

Kashipur has the second highest C I value in the district. This market also takes place at new mandi site. Both the modern facilities of grading machine

and the existence of Kisan Bazar are there. There are two sub-yards attached with this market, out of which one has a new mandi site. It is the Jaspur RAM. Besides, Thakurdwara also has a subsidiary market, although its meetings take place only at ordinary site. Kashipur is also a daily market and has six market meetings in a week. Wednesday is the weekly closing day of this market. The population of this market settlement is 69,870. As per the 1991 Census, the urban status of this market settlement is that of a municipal board. The Mandi Parishad has put this market under the A Special class. In Kashipur, the average annual arrival of various crops is 2,93,000 metric tonnes. The annual fee collected by the market committee at Kashipur is more than Rs. 80,00,000.

Rudrapur RAM has also the same C I value — like that of Kashipur, 87.50. This RAM is held at newly constructed yard. This also has both the modern facilities — the grading machine and the Kisan Bazar. There are four subsidiary markets attached with Rudrapur Mandi namely, Bhurarani, Bhamraula, Baghwala, and Bhainsiya. The Rudrapur RAM opens through the week, thus, it has six market sittings in a week. The weekly closing day of the market is Sunday. Rudrapur market settlement has an urban status of a municipal board with a population of 61,280. The market fee collected annually by the market committee at this market is atleast Rs. 40,00,000 per year. The UP Mandi Parishad has classified it as A Special class market. The annual average of the volume of the crop arrival at this market is 3,14,000 metric tonnes.

Kichha RAM with C I value of 75.37 meets at its new mandi site. It also has both the modern facilities like Rudrapur RAM. Thus, the farmers have not to go out for getting their necessary agricultural needs supplied. They purchase the items of their necessity from the Kisan Bazar. Kichha is a daily market and has six market sittings in a week. Sunday is the closing day of the week for this market. The Kichha settlement has a population of 21,131 with municipal board as its urban status. The market fee annually collected by its market committee is between Rs. 40,00,000 and Rs. 80,00,000. The Mandi Parishad

has classified it as A class market. The average of the total annual crop arrival is 2,47,000 metric tonnes.

Sitarganj with a C I value of 76.87 also has a new market site, equipped with both the modern facilities, as in the cases mentioned above. There are two subsidiary yards with this market — Nanakmatta, and Bhuria. While Nanakmatta has the new market site; Bhuria, however, has its meetings at the old and ordinary site only. The Sitarganj is also a daily RAM and is closed on every Tuesday. The weekly openings thus, are six in number. The settlement has the status of a municipal board and has a population of 16,704. The Mandi Parishad of U.P. has classified it as A class market. The market committee of the market collects Rs. 40,00,000 - Rs. 80,00,000 lakh as market fee every year. The average annual arrival of the crops is 1,99,000 metric tonnes.

Khatima has its C I value equal to Sitarganj. Similarly, it has a new market site, with both the modern market facilities available. Also, it has the same number of subsidiary yards i.e. two but no subyard has a new market site. The two subyards are : Tanakpur, and Banbasa. The Khatima RAM also meets daily and its weekly closing is on Wednesday. Thus, the weekly openings are again 6 in number. This market settlement also has the same urban status, municipal board, as in the earlier cases and has a population of 11,245. The U.P. Mandi Parishad has classified it as A class market and it collects Rs. 40,00,000 - Rs. 80,00,000 annually as market fee. The average annual arrival of various crops is 2,57,000 metric tonnes.

III. Meerut Division

This division has six districts — Saharanpur, Hardwar, Muzaffarnagar, Meerut, Ghaziabad, and Bullandshahr. In all, these districts have as many as 38 RAMs. This is the highest number of RAMs amongst the divisions of the state. This division also has the second highest number of first order RAMs in the state as well. There are four such RAMs in this division.

UTTAR PRADESH REGULATED AGRICULTURAL MARKETS
FIRST ORDER - DIAGRAMMATIC SIZE
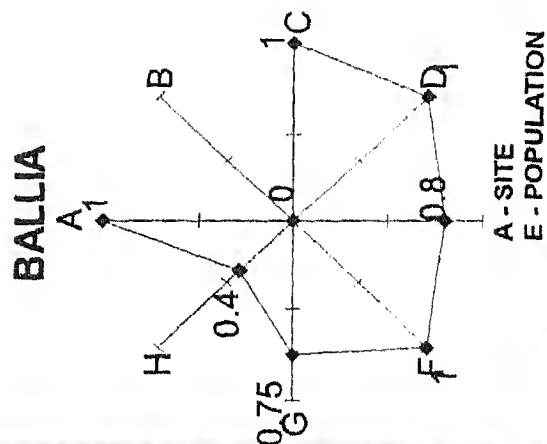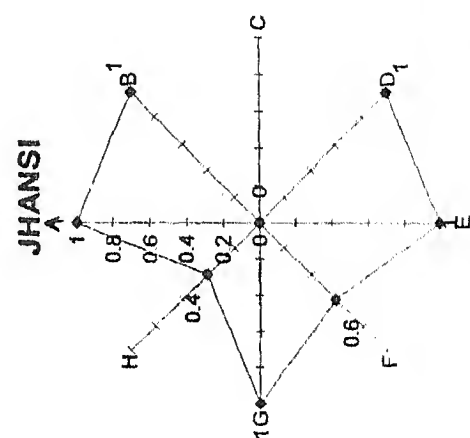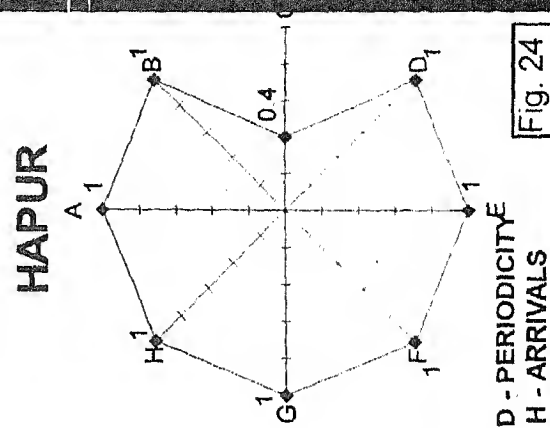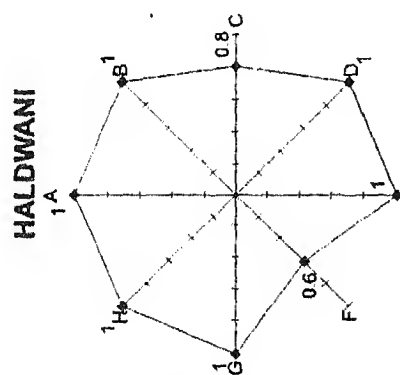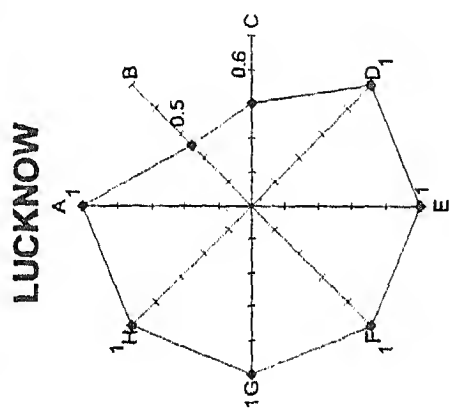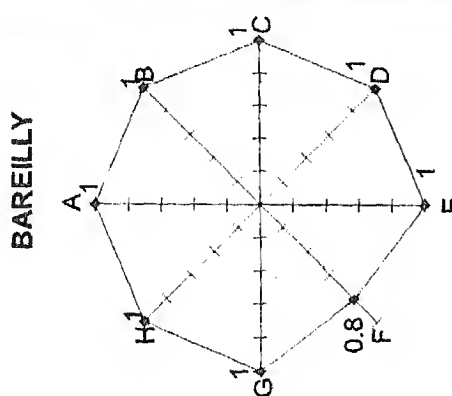
Fig. 24

A - SITE   B - FACILITIES   C - SUB-YARD   D - PERIODICITY
E - POPULATION   F - ROAD LENGTH   G - MARKET FEE   H - ARRIVALS

(i) Saharanpur District

Saharanpur city has also its district headquarter located within its territory. It has a RAM with 85.00 as its C I value. The market has its sittings at a newly constructed site. It has both the modern facilities — grading unit, as also the Kisan Bazar. Thus, the farmers are not forced to go out for purchasing their necessary needs. It has two sub-yards — Behat, and Daudpura while the first one meets at its newly constructed site, the second one has its meeting at its old site. It is a daily RAM and thus has six meetings per week. Sunday is the weekly holiday of this market. It has a population more than one lakh, to be exact, 3,74,945. The status of the city is that of a municipal board. Its market has also the status of 'A' Special class of the Mandi Parishad. The annually collected market fee at this market is more than Rs. 80,00,000. The average annual crop arrival at this market is 563 '000 metric tonnes. The Saharanpur district has an average road length of 52.07 km per 100 km^2 area. The annual marketable surplus of the district is 217.56 '000 metric tonnes while the marketed surplus is 129.65 '000 metric tonnes. The district has 8 RAMs out of which just one market, Saharanpur, has got the status of first order.

(ii) Muzaffarnagar District

Muzaffarnagar city also has its district headquarter. The district has a total of seven RAMs out of which only one is of the first order i.e., Muzzafarnagar. The district has the average road-length of 78.09 km per 100 km^2. The average marketable surplus of the district is 138.70 thousand metric tonnes while its annual marketed surplus is 20.30 thousand metric tonnes. The RAM of the city has a C I value of 90.00 and it meets at newly constructed site. It has both the modern facilities — grading machine as also the Kisan Bazar. However, it has just one sub-yard — Purkaji which does not have even a new market site and, thus, has its meetings at its old site only. The Muzaffarnagar market is a daily market and has six market sitting every week. The market remains closed on every Sunday. The population of this market settlement is

2,47,624 and its urban status is that of an urban agglomeration. The market fee collected every year is to the tune of more than Rs. 80,00,000. It has an average annual arrival of crops at market to the tune of 3,28,000 metric tonnes. The status given by the Mandi Parishad is that of A Special class to the Muzaffarnagar RAM.

(iii) Meerut District

Meerut city also has its district headquarter located within its urban area. It has an average road-length of 76.76 km per 100 km^2 area. The average annual marketable surplus is 171.18 thousand metric tonnes while the marketed surplus is 113.10 thousand metric tonnes. The district has a total of 5 RAMs out of which, just one, i.e. Meerut is the first order RAM. It has the C I value of 75.125. This market meets its meetings at the newly built site. However, as per the mandi records it does not have any modern facility nor it has any sub-yards attached with it. It is a daily market and has six meetings per week. The market remains closed on every Sunday. The population, however, is very large — 8,49,799. The status of the city is that of an urban agglomeration. The market fee collected by the market committee is to the tune of more than Rs. 80,00,000. The average annual crop arrival at this market is 257 thousand metric tonnes. The Mandi Parishad has classified this market as A Special class.

(iv) Ghaziabad District

Hapur is located in Ghaziabad district which has four RAMs out of which only this one is of the first order. Ghaziabad district has road-length of 65.48 km per 100 km^2 area. The annual marketable surplus of the district is 115.43 thousand metric tonnes, while the annual marketed surplus is 30.60 thousand metric tonnes. The C I value of Hapur market is as high as 92.50. This RAM has a newly built site. It has also both the modern facilities i.e. grading as well as Kisan Bazar. This market has two sub-yards — Garh Mukteswar, and Pilkhua. However, both of these have their sittings at their conventional sites

only. Hapur has a daily market and thus, has six market meetings per week. The market remains closed on every Sunday. The market settlement has the status of a municipal board with a population of 1,46,262. The market fee collected by its market committee every year is to the tune of more than Rs. 80,00,000. The average annual crop arrival at this market is 2,46,000 metric tonnes. The Mandi Parishad classified this market as A Special class.

IV. Moradabad Division

The Moradabad division has three districts — Moradabad, Bijnor, and Rampur which have 17 RAMs in all. Only one RAM i.e. Moradabad is of the first order.

(i) Moradabad District

Moradabad district has a total of seven RAMs out of which one i.e. Moradabad is of the first order. The district has its headquarter located at Moradabad only. It has an average road-length of 43.99 km per 100 km^2. The annual marketable surplus of the district is 484.16 thousand metric tonnes while the annual marketed surplus is 236.29 thousand metric tonnes. The Moradabad RAM has a C I value of 92.50. It has its own newly built yard. It also has both the modern facilities — the grading unit and the Kisan Bazar. This market has three sub-yards — Kath, Murapande, and Pipalkhera. Out of these three, only Kath has a newly built market site. Moradabad is a daily market, and thus, has 6 market openings in a week. The market remains closed on every Tuesday. The population of this market settlement is 4,45,710 and the urban status of the city is that of an urban agglomeration. The Mandi Parishad has classified this RAM as A Special class. The annual market fee collected at this market by its market committee is more than Rs. 80,00,000. The average annual crop arrival at this RAM is 2,49,000 metric tonnes.

V. Bareilly Division

There are four districts in this division — Budaun, Bareilly, Pilibhit, and Shahjahanpur. This division has three first order RAMs — Bareilly, Pilibhit, and Shahjahanpur. The number of RAMs in this division is 18 and out of these, there are three first order RAMs.

(i) Bareilly District

Bareilly has its district headquarters located within its urban area. Bareilly district has three RAMs out of which one, Bareilly, is the first order RAM. The district has an average road-length of 52.72 km per 100 km^2 area. The district has its annual marketable surplus as 308.41 thousand metric tonnes while the annual marketed surplus is that of 610.12 thousand metric tonnes. The Bareilly RAM has a C I value of 97.50. This market has a good market site which is equipped with both the modern facilities — mechanical grading unit, and Kisan Bazar. It is more significant to note that this RAM has eight sub-yards — Shishagarh, Shahi, Nawabganj, Faridpur, Deochara, Dhauratanda, Fatehganj east, and Fatehganj west. Bareilly has a daily market and meet six times a week. The closing day of the week is that of Sunday. This market city has a population of 6,17,350 and the urban status of this city is that of an urban agglomeration. The average annual crop arrival of the market is 6,11,000 metric tonnes. The market fee collected by its market committee every year is to the tune of more than Rs. 80,00,000. The Mandi Parishad has classified this market as A Special class.

(ii) Pilibhit District

Pilibhit district has one RAM i.e. Pilibhit falling in this order. This district has its headquarter located at Pilibhit only. The district has only 38.41 km per 100 km^2 area road-length. The annual marketable surplus of the district is 503.49 thousand metric tonnes while the annual marketed surplus is 395.72 thousand metric tonnes. There are three RAMs in this district out of which only one, Pilibhit, is of the first order. The C I value of Pilibhit RAM is 83.95. The market

site is newly constructed and has a good yard. Amongst the market facilities, only grading unit is available. There are three sub-yards related to this market. Out of which, all are having only the conventional market sites i.e. no new yard has been constructed as yet. The three sub-yards are : Urea, Amaria, and Majhola. The Pilibhit market is a daily market and thus, it has six market meetings every week. The weekly closing day of the market is Sunday. The market settlement has a population of 1,06,605. The urban status of this market settlement is that of a municipal board. The average annual crop arrival at this RAM is 367 thousand metric tonnes. The market fee is collected by its market committee to the tune of more than Rs. 80,00,000 every year. The UP Mandi Parishad has categorised it as A Special class.

(iii) Shahjahanpur District

Shahjahanpur city has its district headquarter located within its urban area. The district has on an average 29.68 km per 100 km^2 area road-length. The annual marketable surplus of the district is 783.13 thousand metric tonnes while the marketed surplus is 395.72 thousand metric tonnes. The district has four RAMs out of which one, Shahjahanpur, is of the first order. The C I value of this RAM is 80.00 . The location of the market is at its new mandi site. Both the modern facilities are available at this yard. However, there are no sub-yards attached with this mandi. This is a daily market and thus, has six market meetings per week. The weekly closing day of the market is Sunday. The urban status of this market settlement is that of an urban agglomeration which has a population of 2,60,403. The market fee annually collected by this market committee is more than Rs. 80,00,000. The Mandi Parishad has classified this market as A Special class market. The average of the annual crop arrivals at this RAM is 5,74,000 metric tonnes.

VI. Agra Division

Agra division has six districts — Aligarh, Agra, Mathura, Etah, Firozabad, and Mainpuri. The division has four RAMs of the first order out of which two are

site is newly constructed and has a good yard. Amongst the market facilities, only grading unit is available. There are three sub-yards related to this market. Out of which, all are having only the conventional market sites i.e. no new yard has been constructed as yet. The three sub-yards are : Urea, Amaria, and Majhola. The Pilibhit market is a daily market and thus, it has six market meetings every week. The weekly closing day of the market is Sunday. The market settlement has a population of 1,06,605. The urban status of this market settlement is that of a municipal board. The average annual crop arrival at this RAM is 367 thousand metric tonnes. The market fee is collected by its market committee to the tune of more than Rs. 80,00,000 every year. The UP Mandi Parishad has categorised it as A Special class.

(iii) Shahjahanpur District

Shahjahanpur city has its district headquarter located within its urban area. The district has on an average 29.68 km per 100 km^2 area road-length. The annual marketable surplus of the district is 783.13 thousand metric tonnes while the marketed surplus is 395.72 thousand metric tonnes. The district has four RAMs out of which one, Shahjahanpur, is of the first order. The C I value of this RAM is 80.00 . The location of the market is at its new mandi site. Both the modern facilities are available at this yard. However, there are no sub-yards attached with this mandi. This is a daily market and thus, has six market meetings per week. The weekly closing day of the market is Sunday. The urban status of this market settlement is that of an urban agglomeration which has a population of 2,60,403. The market fee annually collected by this market committee is more than Rs. 80,00,000. The Mandi Parishad has classified this market as A Special class market. The average of the annual crop arrivals at this RAM is 5,74,000 metric tonnes.

VI. Agra Division

Agra division has six districts — Aligarh, Agra, Mathura, Etah, Firozabad, and Mainpuri. The division has four RAMs of the first order out of which two are

located in Aligarh district and one each at Mathura, and Mainpuri. The number of RAMs in this division is 29 which is the second highest amongst all the divisions of the state. This division has also the second highest number of first order RAMs, 4. Thus, out of 29 RAMs, there are four RAMs of the first order in this division.

Aligarh District

Aligarh district has two first order RAMs, out of a total of six RAMs. These first order RAMs are Hathras, and Aligarh. The road-length of the district per 100 km^2 area is 62.46 km. The district has a volume of annual marketable surplus to the tune of 698.86 thousand metric tonnes while the annual marketed surplus is 199.54 thousand metric tonnes.

Hathras RAM with 91.25 C I value meets at the newly constructed site. However, it has only one modern facility — the grading unit. There are three sub-yards attached with this market namely — Sasani, Mursan, and Iglas. Out of these three only Sasani has a newly constructed yard. Hathras is a daily market and remains closed on every Friday. Thus, it has six market openings a week. Hathras is a big market centre with over 1,00,000 population to be exact 1,13,285. The urban status of this market settlement is that of a municipal board. The market fee collected by the market committee every year is more than Rs. 80,00,000. The average annual crop arrival at this market is 248 thousand metric tonnes. The U.P. Mandi Parishad has classified this market as A Special class.

The second market of the first order of Aligarh district is Aligarh itself. Aligarh has a C I value of 83.75. It also meets at a newly constructed site. Similar to Hathras, it has only one modern facility i.e., grading unit. However, it has only one sub-yard, namely, Harduaganj, which does not have a new market site. Aligarh is a daily market and thus, has six market meetings a week. Sunday is the weekly closing day of the market. Although, it has the status of a municipal board, the population of this market settlement is much higher than

Hathras — 4,80,520. Aligarh city also has its district headquater located within its urban area. The market fee collected by its market committee every year is to the tune of more than Rs. 80,00,000. The average crop arrival to the market is 231,000 metric tonnes, while the mandi class as given by the Mandi Parishad is that of A class.

(i) Mathura District

Mathura district has one RAM of the first order i.e. Mathura. The district has three RAMs in all. The district headquarter is also located at Mathura city. The road-length of the district on an average is 58.28 km per 100 km^2 area. The annual marketable surplus is 534.03 thousand metric tonnes while the annual marketed surplus of the district is 110.82 thousand metric tonnes. The C I value of the Mathura RAM is 92.50. The market has a new mandi yard. Both the modern facilities mentioned above are available at this market. There are as many as 6 sub-yards attached with this RAM. However, all of these sub-yards have their market sittings at their conventional sites only. The six sub-yards are Farrah, Sonkh, Math, Govardhan, Raya, and Vrindavan. Mathura is a daily market and thus, has 6 market meetings per week. The market remains closed on Sunday. The status of the city is that of an urban agglomeration. The market settlement has a population of 2,35,922. The market fee annually collected by market committee is over Rs. 80,00,000. The U.P. Mandi Parishad has classified this market as A Special class. The average annual arrival of crops at this RAM is 1,95,000 metric tonnes.

(ii) Mainpuri District

Mainpuri district has three RAMs. Out of these, one, Mainpuri, is of first order. The district headquarter of Mainpuri is located at Mainpuri city. The district has on an average road-length of 47.17 km per 100 km^2 area road-length. The annual marketable surplus of the district is 386.90 thousand metric tonnes while the annual marketed surplus is 162.91 thousand metric tonnes. The C I value of Mainpuri market is 81.25. The RAM has a new market yard.

However, only grading facility is available and the facility of Kisan Bazar does not exist at this. The sub-yards attached with this market are : Koraoli, Bhogaon, and Karhal. However, none of these has any new market yard. Mainpuri market is a daily market and thus, has six market sittings per week. The market is closed on every Sunday. The urban status of the market settlement is that of a municipal board. This market settlement has a population of 76,735. The annual market fee collected by its market committee is more than Rs. 80,00,000. Similar to many other cases, this market has also been classified by the U.P. Mandi Parishad as A Special class. The average annual crop arrival at this market is 2,22,000 metric tonnes.

VII. Kanpur Division

The Kanpur division has four districts — Farrukhabad, Etawah, Kanpur Dehat, and Kanpur Nagar. The number of RAMs in this division is 19, while the number of first order RAMs is just one — Kanpur.

(i) Kanpur Nagar District

It has only one RAM which is of first order — Kanpur. The C I value of Kanpur RAM is 83.75. The RAM has a new market yard. Grading facility is not available at this yard but Kisan Bazar does exist there. There are two sub-yards — Bithoor Kalan, and Rania. However, none of these subsidiary markets has any new market site. Kanpur Nagar RAM, of course, is a daily market and holds six meetings per week. The weekly closing is on Sunday. The urban status of Kanpur is that of an urban agglomeration. The market settlement has a population of 20,29,889, which places the Kanpur City on the top of the state's urban network. The market fee collected by the market committee comes to above Rs. 80,00,000. The U.P. Mandi Parishad has classified this market as A Special class. The average crop arrival for a year is 923 thousand metric tonnes. The annual average of marketable surplus of the

district is 7.61 thousand metric tonnes while the respective marketed surplus is 6.59 thousand metric tonnes.

VIII. Lucknow Division

The Lucknow division has six districts — Kheri, Hardoi, Sitapur, Unnao, Lucknow, and Raebareli. This division has 28 RAMs, the third largest number amongst all the divisions of the state. Out of these, there are three first order RAMs in this division — Lucknow, Sitapur, and Lakhimpur.

(i) Kheri District

Lakhimpur is the district headquarter of Kheri. It is one of the three first order RAMs of Lucknow division. The road-length per 100 km^2 of this district is 28.40 km. The annual marketable surplus of this district is 462.23 thousand metric tonnes while the annual marketed surplus is 436.48 thousand metric tonnes. The Lakhimpur RAM has a C I value of 80.00. This market has a new yard. Both the grading unit as well as the Kisan Bazar facilities are available in this market. However, there is just one sub-yards Kheri, which does not have any new market site till now. The Lakhimpur RAM is a daily RAM like all the above first order markets. Thus, there are six market meetings per week at this RAM. The closing day of this RAM is Monday. The market settlement has a population of 79,951 and has an urban status of a municipal board. The annual market fee collected by the market committee at this market is over Rs. 80,00,000. The U.P. Mandi Parishad has classified this market as A Special class. The average annual crop arrival at this RAM is 308 thousand metric tonnes.

(ii) Lucknow District

Lucknow is the second first order RAM of Lucknow division. The Lucknow district has its headquarter located at Lucknow City. The district has an annual marketable surplus of 2.00 thousand metric tonnes, while the annual

marketed surplus is 45.98 thousand metric tonnes. The road-length per 100 km^2 area in this district is 68.35 km. The C I value of Lucknow RAM is 88.75. This RAM has a new market yard, and although, grading facility is not available, Kisan Bazar does exist there. There are four sub-yards attached with this first order RAM. These sub-yards are — Malihabad, Mal, Bakshi Ka Talab, and Itaunja. However, all of these sub-yards have no newly developed market sites. The Lucknow market is a daily market and thus, has six market sittings in a week. The weekly closure of the market is on Sunday. The market settlement of Lucknow has a population of 16,69,240 which is only second in rank after Kanpur City in the entire state. The urban status of this market settlement is that of an urban agglomeration. The Lucknow RAM collects more than Rs. 80,00,000 as its annual market fee. The U.P. Mandi Parishad has classified this market as A Special class. The average annual crop arrival at the RAM is 382 thousand metric tonnes.

(iii) Sitapur District

The Sitapur district has seven RAMs out of which one — Sitapur — is the first order RAM. All the other RAMs of the district are only the third order RAMs. The district headquarter of Sitapur is located at Sitapur City. The road-length of the district is 38.09 km. per 100 km^2 area. The marketable surplus of the district is 294.18 thousand metric tonnes, while the annual marketed surplus is 176.51 thousand metric tonnes. The C I value of Sitapur RAM is 78.75. This RAM has a new market site. Only the grading unit is available as a modern facility at the market. This RAM has one sub-yard namely, Khairabad which does not have any new market site. Sitapur is a daily market and thus, has six market sittings per week. Sunday is the weekly closing day of the market. The market settlement has a population of 1,21,842. The urban status of the market city is that of a municipal board. The U.P. Mandi Parishad has categorised this market as A Special class.The market fee collected by the market committee through the year is more than Rs. 80,00,000. The average annual crop arrival of this market is 248 thousand metric tonnes.

IX. Faizabad Division

This division has five districts namely Bahraich, Barabanki, Gonda, Faizabad, and Sultanpur. There are 21 RAMs spreading over these districts in this division. In the entire division, there is just one first order market — Bahraich.

(i) Bahraich District

Bahraich district has its headquarter located at Bahraich city. This district has a road-length of 27.61 km per 100 km^2 area. The annual marketable surplus of the district is 383.83 thousand metric tonnes while the annual marketed surplus of the district is 167.97 thousand metric tonnes. The C I value of Bahraich RAM is 80.00. This RAM has one new mandi site. It has both the modern facilities namely grading unit, and Kisan Bazar. This market has just one sub-yard, Chilberia which has its meetings at its conventional site only as it doesn't have a new market site. Bahraich market is a daily market and therefore has six market sittings per week. The closing day of the market during the week is Sunday. The market settlement has a population of 1,35,400 and the urban status is that of a municipal board. The market fee collected annually by the market committee is more than Rs. 80,00,000. The U.P. Mandi Parishad has categorised this market as A Special class.The average annual crop arrival at this RAM is 782 thousand metric tonnes.

X. Gorakhpur Division

The Gorakhpur division has five districts namely, Basti, Siddharthanagar, Gorakhpur, Maharajganj, and Deoria. There are 14 RAMs spreading over these five districts of the division. Amongst these only one RAM is of first order. This is the Gorakhpur RAM.

(i) Gorakhpur District

The district headquarter of Gorakhpur is located at Gorakhpur city. The district road-length per 100 km^2 area is 33.78 km. The average marketable surplus of the district is 240.70 thousand metric tonnes while the marketed surplus is 40.63 thousand metric tonnes per annum. The C I value of Gorakhpur RAM is 80.00. The Gorakhpur RAM has its own market site. The market has one modern facility. There are three sub-yards attached with this RAM. Sonbarasa Khurd has its new market yard. Besides, Badhalganj, and Sahebganj susidiary markets hold their market sittings at old sites only. Gorakhpur market is a daily market and therefore, has six market sittings per week. The weekly closing day of this market is Sunday. The market settlement has the population of 5,05,566 and has an urban status of a municipal corporation. This is the only municipal corporation of the state, as per the Census records. The market committee of this RAM collects over Rs. 80,00,000 as market fee annually. The U.P. Mandi Parishad has categorised this market as A Special class.The average annual crop arrival at this RAM is 264 thousand metric tonnes.

XI. Azamgarh Division

The Azamgarh division has four districts namely Jaunpur, Azamgarh, Mau, and Ballia. The total number of RAMs in these districts is ten. Out of these, only one, Ballia, is the first order RAM.

(i) Ballia District

Ballia district headquarter is located at Ballia city. The district has four RAMs in all. The road-length of the district per 100 km^2 area is 71.42 km. The annual marketable surplus of the district is 208.38 thousand metric tonnes while the annual market surplus is 15.25 thousand metric tonnes. The C I value of Ballia RAM is just 75.12. Although, this market has a newly built market yard but it doesn't have any modern facility. However, there are five sub-markets

attached with this RAM. The sub-markets are Sahaswar, Raniganj, Bansdih, Rewati, and Maniyar. Out of these sub-yards only the first one, Sahaswar, has the newly built market yard. The Ballia RAM is a daily market and thus, has six market meetings per week. This RAM remains closed on every Sunday. This market settlement has a population of 84,063 and has the urban status of a municipal board. The Mandi Parishad of Uttar Pradesh has put this market as A class — while generally, the first order markets are A Special class of the Parishad. The Mandi Fee collected by the Mandi Samiti every year is between Rs. 40,00,000 and Rs. 80,00,000. The average annual crop arrival of this RAM is 84 thousand metric tonnes.

XII. Allahabad Division

The entire Allahabad division has three districts only, namely, Fatehpur, Pratapgarh, and Allahabad. The total number of RAMs spreading over these districts is 11. However, there is just one first order RAM amongst these districts — Allahabad.

(i) Allahabad District

The district headquarter of Allahabad is located at Allahabad city. The district has a road-length of 45.68 km per 100 km^2 area. The annual marketable surplus of the district is 290.30 thousand metric tonnes, while the annual marketed surplus is 55.55 thousand metric tonnes. The C I value of Allahabad RAM is 91.25. The RAM has its own new site. Although, grading unit facility is not present but the Kisan Bazar facility, does exist here. It is very significant to mention that there are as many as nine sub-yards attached with this RAM. These sub-yards are : Phulpur, Manori, Sarai, Akil, Mau Aima, Jhusi, Handia, Chayal, and Baraut. Out of these, only Phulpur has a newly constructed market yard. The Allahabad RAM is a daily market and thus has six meetings per week. The weekly closing day of this RAM is Sunday. This market settlement has a population of 8,44,546 and its urban status is that of an

urban agglomeration. The annual market fee collected by its committee is over Rs. 80,00,000. The U.P. Mandi Parishad has classified this market as A Special class. The average annual crop arrival of this RAM is 507 thousand metric tonnes.

XIII. Varanasi Division

The Varanasi division has four districts namely, Varanasi, Ghazipur, Mirzapur, and Sonbhadra. There are 11 RAMs spreading other these districts in the division. However, there is just one RAM as the first order RAM. This is located at Varanasi.

(i) Varanasi District

Varanasi district has its district headquarter too. This district has 72.80 km road-length per 100 km^2 area. The annual marketable surplus of the district is 261.27 thousand metric tonnes. While the annual marketed surplus is 20.70 thousand metric tonnes. The C I Value of the Varanasi RAM is 91.25. The Varanasi RAM has its new market site. The grading facility is not available but the Kisan Bazar facility does exist. There are five sub-yards attached with this RAM. These sub-yards are : Pindara, Mughalsarai, Mughalpura, Jamua, and Danganj. However, no sub-yard has any new market site. Varanasi market is a daily market and has thus, six openings per week. The market remains closed on every Sunday. The market settlement has a population of 10,30,836 and its urban status is that of an urban agglomeration. The market fee collected by its market committee is over Rs. 80,00,000 annually. This market has been classified by the U.P. Mandi Parishad has A Special class. This RAM has an average annual crop arrival to the tune of 543 thousand metric tonnes.

XIV. Jhansi Division

This division has five districts namely — Jhansi, Jalaun, Banda, Hamirpur, and Lalitpur. There are 27 RAMs spreading over these districts in this division. The division has two first order RAMs — Lalitpur, and Jhansi. The entire Bundelkhand area is a backward area. Yet the government is doing much more to develop the RAMs of this region.

(i) Jhansi District

The Jhansi district has six RAMs out of which one, Jhansi, is the first order RAM. The Jhansi district has got its headquarter located at Jhansi city only. The district has 41.26 km road-length per 100 km ^{2} area. The annual marketable surplus of the district is 118.73 thousand metric tonnes while the annual marketed surplus is 42.50 thousand metric tonnes. The C I value of Jhansi RAM is 76.00. This RAM has a newly constructed market yard. Both the facilities i.e. the grading unit and Kisan Bazar have been made available by the government at this mandi yard. However, there are no sub-yards related to this market. The market is a daily market and thus, has six meetings per week. The weekly closing day is Tuesday. The market settlement has a population of 3,68,154 and the urban status of the city is that of an urban agglomeration. The market fee collected by the market committee through the year is over Rs. 80,00,000. The U.P. Mandi Parishad has classed this market as A Special class. The average annual crop arrival at this RAM is 87,00,000 metric tonnes.

(ii) Lalitpur District

Lalitpur is another first order RAM of the Jhansi division. The Lalitpur district has its headquarter located at Lalitpur city. The district has only two RAMs out of which, Lalitpur is the first order RAM. The district has 23.89 km road-length per 100 km^2 area. The annual marketable surplus of the district is 173.28

thousand metric tonnes, while the annual marketed surplus is 51.34 thousand metric tonnes. The C I value of Lalitpur RAM is 80.00. Lalitpur RAM also has a newly built market site as also both the modern facilities — the grading unit as well as the Kisan Bazar — are available at this yard. There are two sub-yards — Pali, and Talbehat. Out of these two, the first one — Pali — has also a new mandi site. This RAM is a daily market and, thus, has six market openings per week. The weekly closure is on Sunday. The market settlement has a population of 79.870 and the urban status of the city is that of a municipal board. The RAM has been classed by the government as A Special class.The market fee collected by its committee. every year is over Rs. 40,00,000. The average annual crop arrival of this RAM is 108 thousand metric tonnes.

The above details reveal that the said 30 first order RAMs, if ranked, have 17 positions. The first ranker is the Bareilly RAM with 97.50 C I value. The second rank has been secured by four RAMs of this order namely, Moradabad, Haldwani, Hapur, (Ghaziabad), and Mathura. All these first order RAMs have their C I values equal to 92.50 each. Hathras, Varanasi, and Allahabad have occupied the third rank with a C I value, 91.25 each. The Fourth ranker is Muzaffarnagar with its CI value of 90.00. It is followed by Lucknow on the fifth rank with 88.75 C I value. In the sixth rank two first order RAMs are there — Rudrapur, and Kashipur — with 87.50 C I value each . The seventh position goes to Saharanpur with 85.00 C I value followed by the eighth ranker, Pilibhit, of which C I value is 83.95. On the ninth position, again there are two RAMs of this order — Aligarh, and Kanpur Nagar with 83.75 C I value each. The tenth rank is held by Mainpuri which has a C I value of 81.25. On the eleventh position, there are 5. first order RAMs named Shahjahanpur, Lakhimpur, Bahraich, Gorakhpur, and Lalitpur which have their C I value equal to 80.00 each. On the twelfth position is Sitapur with a C I value of 78.75. The thirteenth position is held by Dehradun which has a C I value of 78.12. Again, the fourteenth position is shared by two first order RAMs, both located in Nainital district — Khatima, and Sitarganj. The C I

value of these RAMs is 76.87 each. Jhansi is placed on the fourteenth position while Kichha has the fifteenth position with their respective C I values as 76.00, and 75.37 respectively. One the last position i.e. the seventeenth again there are two first order RAMs namely, Meerut, and Ballia with C I value of 75.12 each. All these positions have been illustrated through Figure 23.

Figure 22 also reveals a very rational and logical picture of the distribution of the first order RAMs of the state (except, of course, those of Nainital district). Along the western border of the state, from north, these markets are Dehradun, Saharanpur, Muzaffarnagar, Meerut, Hapur, Aligarh; and towards south Hathras, Mathura, Mainpuri, Jhansi, and Lalitpur. More or less, along the northern border, the first order markets are Pilibhit, Lakhimpur, Bahraich, and Gorakhpur. And from north-west to south-east and and then towards south and sout-west and further eastward the first order markets are Moradabad, Bareilly, Shahjahanpur, Sitapur, Lucknow, Kanpur, Allahabad, Varanasi, and Ballia. The Nainital district has six such markets which in a series from west to east are Kashipur, Rudrapur, Kichha, Sitarganj, and Khatima. Haldwani, of course, located towards north in this district, thus, more or less, all of these 30 first order RAMs are distributed with some system excepting the hill region where the most of the area is devoid of such a RAM while a small part of it has as many as six RAMs located close to each other. The 23 RAMs of the first order (i.e. excepting 7 of the total 30 of which 5 belong to the eastern U.P., while 2 to the Bundelkhand region) cover the entire state, more or less uniformly — from north to south, and from west to east. The Figure shows that their mutual spacing is little bit less in western part while in the eastern part of the state, it is comparatively more and more specifically between Bahraich, Lucknow, Kanpur, and Jhansi on the one hand; and Gorakhpur, Ballia, Varanasi, and Allahabad, on the other.

II. Second Order RAMs

Following the top level RAMs, are the second order RAMs each of which on an average has secured a score above 0.5 in every case of parameter. The plan makes it obvious that this tier has the CI value limits as — above 50 but not above 75. Thus, the RAMs whose CI values are upto 75 (but above 50) have been included in this order. In terms of the weights of various parameters, the various RAMs of this order, broadly speaking, have the following as their minimum qualification :

Each market of this order has at least one modern facility available at the market site which may be even an ordinary site only. The main market has more than two ordinary and/or one new sub-yard(s). The periodicity of the market opening is more than twice a week. The market settlement has a population more than 20,000. The road-length of the district is above 30 km. per 100 km^2 area. The market fee collected by the market committee should be an amount between Rs. 20,00,000 and Rs. 40,00,000 per annum and the volume of the crop arrivals in the market is above 100 thousand metric tonnes annually. About one-third of these RAMs have got the A class of the U.P. Mandi Parishad while others belong to B class (in a few cases C class too). Each of these market settlements has, generally, the urban status of a municipal board.

There are 96 second order RAMs in the state. At the sub-region level, these are : 4 in hill region, 40 in western U.P., 19 in central U.P., 21 in eastern U.P. and 12 in the Bundelkhand region. While at the division level, these RAMs are : 1 in Garhwal, 3 in Kumaon, 12 in Meerut, 11 in Moradabad, 8 in Bareilly, 9 in Agra, 9 in Kanpur, 10 in Lucknow, 7 in Faizabad, 3 in Azamgarh, 4 in Gorakhpur, 3 in Allahabad, 4 in Varanasi, and 12 in Jhansi. The diagrammatic sizes of various second other RAMs have been demonstrated through Figure 25.

The list already given shows clearly that there are 16 districts which have one such RAM each. There are 15 districts which have two such RAMs each. Six districts have three such RAMs each, while 7 districts have four such RAMs each. There is just one district which has as many as five markets of this order.

I. Five-RAM-District

Moradabad district besides having one first order RAM i.e. Moradabad is the one which has the largest number, 5, RAMs of the second order. These RAMs with their C I values are Amroha(67.50), Hasanpur (68.12), Sambhal (64.37), Bahjoi (57.50), and Chandausi (71.87).

Thus, amongst these, Chandausi RAM has the highest while Bahjoi has the lowest C I value. The Chandausi RAM has newly constructed market site where the market meetings take place through the week except on Sunday. This market is also equipped with both the modern facilities i.e. grading unit, and Kisan Bazar. There are, however, no sub-yards attached with this market. The market settlement has the population of 82,748 and it has the urban status of a municipal board. The market has been categorised by the U.P. Mandi Parishad as A class and the market fee collected by its market committee through the year is between Rs. 40,00,000 and Rs. 80,00,000. The average annual crop arrival of this market is 129 thousand metric tonnes. This district has seven RAMs in all out of which just one is the first order RAM, five are of the second order RAMs, thus only one market is of the third order.

II. Four-RAM-Districts

The seven districts which have the four RAMs each second order of are : Bijnor, Budaun, Aligarh, Farrukhabad, Hardoi, Jalaun, and Jhansi.

(i) Bijnor District

In Bijnor district, Nazibabad with C I value 67.50, Kirthpur with C I value 61.87, Dhampur with CI value 61.25, and Chandpur with C I value 63.75 are the second order markets. The average road-length per 100 km² area in this district is 55.73 km. The annual marketable surplus of the district is 154.72 thousand metric tonnes, while the annual marketed surplus is 28.90 thousand metric tonnes. Bijnor district has 7 RAMs out of which four are of the second order. The Nazibabad RAM has the highest C I value amongst all of the RAMs. This market has the newly constructed yards but has just one modern facility — Kisan Bazar only. There is just one sub-yard without any new market site, Nangal which is attached with it. Although, Nazibabad is a daily market with Thursday as its weekly closing day, it has only the B Class status of the U.P. Mandi Parishad . The annual market fee collected at this market by its market committee is between Rs. 20,00,000 and Rs. 40,00,000. The status of market settlement is that of a municipal board. The average annual crop arrival at this market is 110 thousand metric tonnes.

(ii) Budaun District

In Budaun district, there are four RAMs of the second order. These are Sahaswan (58.12), Bilsi (55.00), Ujhani (69.37), and Budaun (65.00). The district has an average road-length of 35.78 km per 100 km² area. The marketable surplus of the district is 568.86 thousand metric tonnes, while the marketed surplus is 248.13 thousand metric tonnes annually. The Ujhani RAMs has the highest CI value. This is because , it has a new market site, both the modern facilities mentioned above, and the market fee collected by its market committee to the tune of Rs. 40,00,000 - Rs. 80,00,000 annually. Besides, this market has also been classified as A class by the U.P. Mandi Parishad. This is a daily market and remains closed on every Wednesday. The market settlement has a population of 38.995 with its status of a municipal board.

(iii) Aligarh District :

District Aligarh besides having two — Hathras, and Aligarh — first order RAMs, also has got four second order RAMs namely, Khair, (67.50), Atrauli (56.87), Chhara (65.62), and Sikandararau (58.75). This district has in all six markets only. The Khair RAM has the highest C I value. This market has a newly constructed site with Kisan Bazar facility. It also has two sub-yards attached with it. These sub-yards are Jathani, and Nau Jheel. The Ujhani RAM is a daily market and is closed on every Wednesday. The market settlement has a population of 21.770 and has the urban status of a municiple board. The market fee collected by its market committee every year is between Rs. 20,00,000 and Rs. 40,00,000. The U.P. Mandi Parishad has classed this market as a B class market. The average annual crop arrival at this RAM is only 98,000 metric tonnes.

(iv) Farrukhabad District :

Farrukhabad district has six RAMs. Out of which, four RAMs are of second order. The district has 45.06 km road-length per 100 km^2 area. The annual marketable surplus of the district is 367.62 thousand metric tonnes, while the annual marketed surplus is 69.94 thousand metric tonnes only. The second order markets of this district are : Kaimganj (66.87), Farrukhabad (69.37), Chibramau (66.25) and Kannauj (69.37). Thus, Farrukhabad and Kannauj have the higher and the same C I values than the other two RAMs.

Farrukhabad has a newly constructed market site. It is a daily market with Sunday as its weekly closing day. The market settlement has a population of 2,08,727 and its urban status is that of an urban agglomeration. It has an annual collection of market fee to the tune of Rs. 40,00,000 - Rs. 80,00,000 and it has been categorised by the U.P. Mandi Parishad as a B class market. The average annual market arrival at this RAM is 22.1 thousand metric tonnes.

The Kannauj RAM also has a newly market site. It has Kisan Bazar facility also. There are three sub-yards attached with this RAM. Out of which, Tirwaganj has a newly developed site. Umarda, and Belamau are the ordinary sub-yards of this RAM. This RAM is also a daily market and remains closed on Tuesday. The market settlement has the population of 58,932 with municipal board, as its urban status. However, U.P. Mandi Parishad has classified it as C class market. The annual market fee collected by its committee is upto Rs. 20,00,000. The market arrival at this RAM is 66 thousand metric tonnes.

(v) Hardoi District

In Hardoi district, there are only 5 RAMs out of which, Sandi is of the third order while all the rest RAMs are of the second order. This district has an average road-length of 36.38 km per 100 km² area. The annual marketable surplus of the district is 535.03 thousand metric tonnes, while the annual marketed surplus is 249.38 thousand metric tonnes. The second order RAMs with their C I values are : Shahabad (67.50), Hardoi (73.75), Madhoganj (56.87), and Sandila (62.50). Hardoi city which also has its district head quarter located within the urban area has the highest C I value in the district. It has only lagged behind the first order RAM. It has a new market site, and Kisan Bazar facility, is also there. Also, one sub-yard named Bagholi is attached with it. This RAM has a daily market openings with Sunday as weekly closure. The market settlement has a population of 88,651 and has the status of a municipal board. The market fee collected by its market committee is to the tune of more than Rs. 80,00,000 annually. The U.P. Mandi Parishad has classed this market as A class market. The average annual crop arrival at this RAM is 190 thousand metric tonnes.

(vi) Jhansi District

Jhansi district has in all six RAMs out of which one, Jhansi, is the first order RAM while four are the second order RAMs and only Baruasagar is of the

third order RAM. The RAMs with their C I values of this order are Chirgaon (58.75), Mauranipur (66.87) Gurusarai (60.00), and Moth (66.25). The Mauranipur has the highest C I value. This market has a new market site equipped with both the modern facilities — grading unit, and Kisan Bazar. It also has one sub-yards named Ranipur. This RAM is a daily market with Monday as its weekly closing day. It has a population of 43,714 and the urban status of a municipal board. The market fee collected through the year is about Rs. 40,00,000 - Rs. 80,00,000. The U.P. Mandi Parishad has categorised it as A class market of which the annual crop arrival is 41 thousand metric tonnes.

(vii) Jalaun District

Jalaun District has seven RAMs, out of which four are of second order. This district has 37.76 km on an average road-length per 100 km^2 area. The annual marketable surplus of the district is 137.61 thousand metric tonnes while the annual marketed surplus is only 73.14 thousand metric tonnes. The second order RAMs with their respective C I values (of the district) are : Konch (71.87), Ait (57.50), Orai (75.00), and Jalaun (61.25). Thus, Orai has the highest C I value. This RAM has only lagged behind the first order RAM as it has a new market site with both the modern facilities namely, grading unit, and Kisan Bazar. It has a daily market which remains closed on Tuesday. The RAM has a population of 98,716 with municipal board status. The market fee collected every year is to the tune of over Rs. 80,00,000. The U.P. Mandi Parishad has classed this market as A Special class.It has an average crop arrival of 136 thousand metric tonnes at its RAM.

III. Three RAM Districts

The six districts which have three second order RAMs each are Nainital, Meerut, Etawah, Kheri, Raebareli, and Hamirpur.

UTTAR PRADESH REGULATED AGRICULTURAL MARKETS
SECOND ORDER - DIAGRAMMATIC SIZE

RISHIKESH

SHAMLI

CHANDAUSI

KANNAUJ

PRATAPGARH

MAUDAHA

A - SITE   B - FACILITIES C - SUB-YARD D - PERIODICITY
E - POPULATION F - ROAD LENGTH G - MARKET FEE H - ARRIVALS

Fig. 25
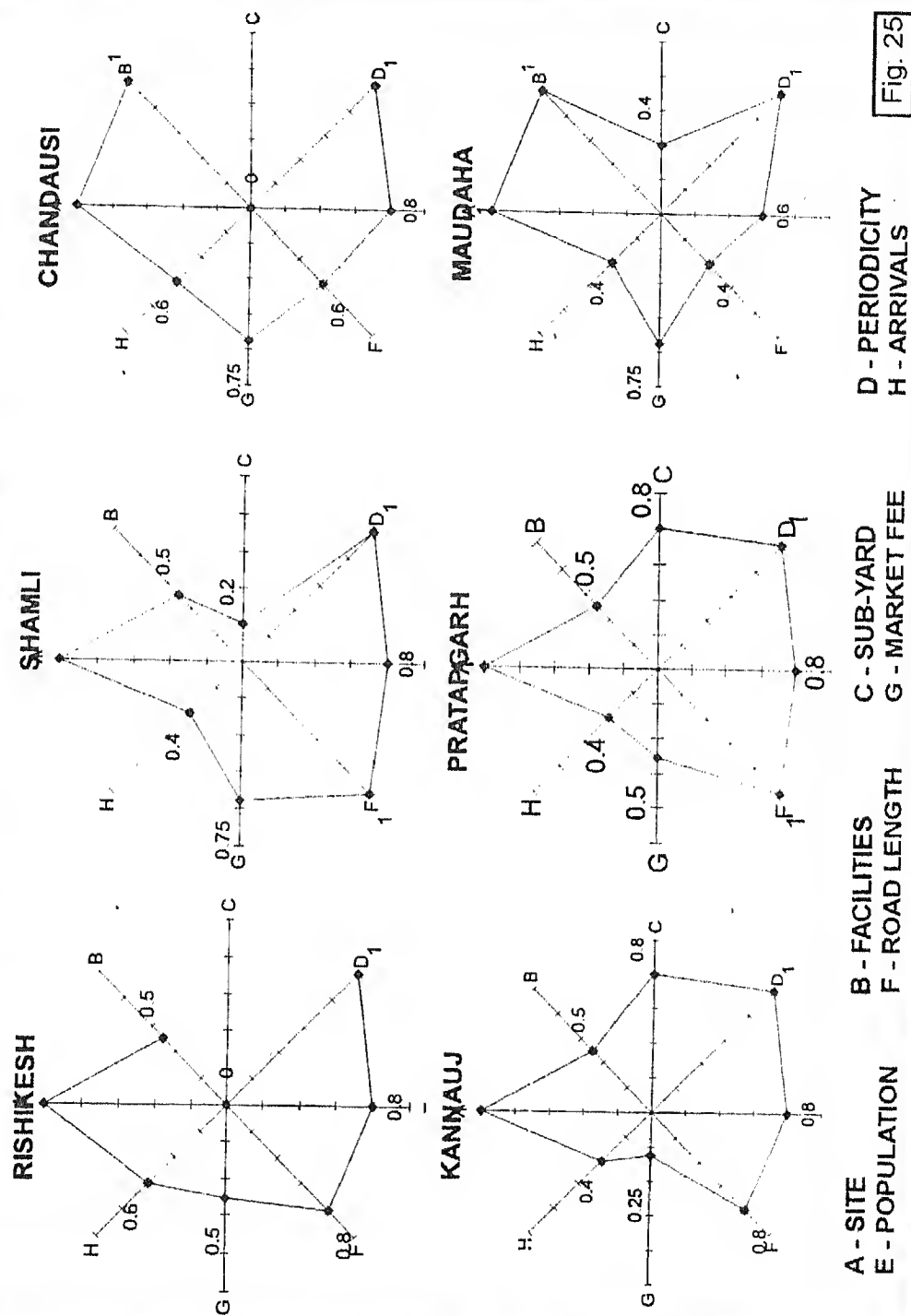
(i) Nainital District

Nainital district has nine RAMs in all out of which six are of first order and the remaining three of the second order. These three RAMs are Ramnagar, (67.50), Bajpur (66.25), and Gadarpur (60.62). Thus, Ramnagar has the highest C I value. Ramnagar also has a new market site, grading unit facility, three sub-yards, namely, Shankarpur Khajanchi, Peeramdara, and Chilkhia. This is a daily market with Friday closing. The market settlement has a population of 37,280 and its status is that of a municipal board. However, the U.P., Mandi Parishad has classed this market as .B class. The market fee collected through the year at this market by its committee is Rs. 20,00,000 – Rs. 40,00,000. The average annual crop arrival at this RAM is 132 thousand metric tonnes.

(ii) Meerut District

In Meerut district, there are five RAMs out of which one , Meerut, is the first order RAM. Sardhana is the only the third order RAM while the rest three RAMs are of second order. These markets with their respective C I values are Baraut, (77,00), Khekhera (55.60), and Mawana (54.37) Thus, Baraut has the highest C I value . It has a new market site with Kisan Bazar facility and two sub-yards namely Chapproli, and Binauli. This RAM is a daily market and remains closed on Sunday. It has a population 67,705 with its status of a municipal board. The market fee collected by the market committee per annum is Rs. 20,00,000 - Rs. 40,00,000. The U.P. Mandi Parishad has classified this market as B class of which average annual crop arrival is 71 thousand metric tonnes.

(iii) Etawah District

In Etawah district, there are six RAMs in all out of which three are of the second order and three of the third order. This district has a road-length of

46.65 km per 100 km^2 area. The annual marketable surplus of the district is 455.68 thousand metric tonnes while the average annual marketed surplus is 219.16 thousand metric tonnes. The second order RAMs with C I values are : Etawah (64.37), Bharthana (59.37), and Auraiya (61.87). Thus Etawah has the highest C I value. It has a new market yard, and it is a daily market which remains close on Sunday. The market settlement has a population of 1,24,072 and also has the status of a municipal board. The market fee collected by its market committee at market every year comes to Rs. 40,00,000 - Rs. 80,00,000. The U.P. Mandi Parishad has classed this market as A class and its annual crop arrival is 135 thousand metric tonnes.

(iv) Kheri District

In Kheri district also, there are six RAMs. This district has one, Lakhimpur, first order RAM. There are three RAMs of second order namely, Paliakalan (73.12), Gola gokrannath (67.50), and Mohammadi (55.00). Thus, Paliakalan is lagging behind the first order market . This has a new market site with grading unit facility. However, there are five sub-yards namely, Chandan Chauki, Khajuria, Mailaini, Sampurna nagar, and Mira kheri. This market is a daily market with Sunday as weekly closing. It has a population of 26,855 and the urban status of a municipal board. The U.P. Mandi Parishad has classed it as A class. The annual market fee collected by the market committee at this market is between Rs. 40,00,000 and Rs. 80,00,000. The average annual crop arrival at this market is 184,000 metric tonnes.

(iv) Raebareli District

In Raebarelli district, there are five RAMs out of which three are of the second order. This district has a road-length of 50.99 km per 100 km ^{2} area. The annual marketable surplus of the district is 266.62 thousand metric tonnes, while the annual marketed surplus is 102.11 thousand metric tonnes. The second order RAMs with C I values are : Lalganj (58.12), Raebareli (72.52), and Jais (56.25). Thus, Raebareli has the highest C I value. It has a newly

constructed yards with grading unit facility. This market has four sub-yards namely Harchandpur, Munsiganj, Gumbakshganj, and Kandaura. The daily market of Raebareli remains closed on Tuesday. The market settlement has a population of 1,29,904 and the urban status of a muncipal board. However, the U.P. Mandi Parishad has classified it as B class market. The market fee collected every year by the committee is between Rs. 20,00,000 and Rs. 40,00,000. The average annual crop arrival at the market is 73 thousand metric tonnes.

(vi) Hamirpur District

Hamirpur district has seven markets in all out of which three are of second order and the rest four are of third order. This district has only 23.47 km per 100 km^2 area as average road-length. The district has annual marketable. surplus of 200.31 thousand metric tonnes while the marketed surplus is 85 thousand metric tonnes. The three second order markets of this district with their respective C I values are : Rath (66.87), Maudaha (69.37), and Charkhari (55.62). Thus, Maudaha has the highest C I value. The Maudaha RAM has a new market site and is equipped with both the modern facilities — grading unit and Kisan Bazar. There are two sub-yards attached with it — Muskara, and Ichauli. The Maudaha market is a daily market and remains closed on Thursday. The market settlement has a population of 26,520 and the status of a municipal board. The U.P. Mandi Parishad has classified it as A class market. The market fee annually collected by the market committee at this market is between Rs. 40,00,000 and Rs. 80,00,000. The annual crop arrival at this RAM is 51 thousand metric tonnes.

IV. Two-RAM-Districts

There are 15 districts which have two second order RAMs each. These districts are : Hardwar, Muzaffarnagar, Ghaziabad, Bullandshahr, Rampur, Pilibhit, Agra, Etah, Kanpur Dehat, Faizabad, Sultanpur, Barabanki,

Maharajganj, Jaunpur and Varanasi. The districtwise these markets with their respective C I values are : Mangalore (69.37), Hardwar Union (58.75) in Hardwar; Shamli (70.65), Khatauli, (74.25) in Muzaffarnagar; Muradnagar (55.62), Ghaziabad-Sahibabad (71.87) in Ghaziabad; Bullandshahr (66.87), Jahanagirabad (63.75) in Bullandshahr; Rampur (73.95), Bilaspur (66.12) in Rampur; Bisalpur (66.87), Puranpur (67.50) in Pilibhit; Agra (68.75), Khairagarh (56.25) in Agra; Kasganj (65.62), Etah (64.37) in Etah; Rura (55.62), Baripal (56.87) in Kanpur Dehat; Barabanki (63.12), Safdarganj (56.25) in Barabanki; Faizabad (71.87), Akbarpur (58.12) in Faizabad; Jafarganj (55.05), Sultanpur (67.50) in Sultanpur; Partawal (57.50), Nautanwa (56.87) in Maharajganj; Jaunpur (73.75), Shahganj (65.00) in Jaunpur; and Gopiganj (56.25), Chandauli (54.37) in Varanasi.

(i) Hardwar District

In Hardwar district, there are three RAMs out of which two are of second order and the remaining Roorkee is a third order RAM. Hardwar district has road-length of 42.54 km per 100 km ^{2} area. The average marketable surplus of the district is 23.60 thousand metric tonnes while annual marketed surplus is 27.38 thousand metric tonnes.

The Mangalore RAM has a new market site and it is a daily market with Monday closing. This market, however, has as many as eight sub-yards namely Jhabrera, Jhikampur, Laksar, Landaura, Raesi, Gordhanpur, Sherpur, and Narsan. The market settlement has a population of 34,161 with municipal board status. The market fee collected by its committee during a year is Rs. 40,00,000 - Rs. 80,00,000. The U.P. Mandi Parishad has classified this market as A class. The average crop arrival at this RAM is 115 thousand metric tonnes.

Hardwar Union has only Kisan Bazar facility, one ordinary subyard, Bahadurabad, and a daily market which remains closed on every Wednesday.

The market settlement has a population of 1,87,392 and the urban status of Hardwar is that of an urban agglomeration. The annual market fees collected at this market is between Rs. 40,00,000 — Rs. 80,00,000. The U.P. Mandi Parishad has classified this market as a B class market. The annual arrival of crops at the market is 55,000 metric tonnes.

(ii) Muzaffarnagar District

In Muzaffarnagar district, Khatauli RAM is lagging behind the first order RAMs. It has a new market yard, both the modern facilities mentioned above, two sub-yards namely Jansath, and Mirapur and it has a daily market which remains closed on Monday. The population of this market settlement is 44,319 with municipal board status. The U.P. Mandi Parishad has classified it has B class market and the market fee collected at this market annually is Rs. 20,00,000 - Rs. 40,00,000. The average crop arrival is 101 thousand metric tonnes. Shamli has a new market site, grading unit facility, one ordinary i.e. Jhijhana, sub-market and a daily periodicity of the market which remains closed on every Sunday. The market settlement has a population of 70,853 and its urban status is that of a municipal board. The U.P. Mandi Parishad has categoriesed this market as A class. The average annual arrival of crops at Shamli is 64,000 metric tonnes.

(iii) Ghaziabad District

This district has four markets out of which Hapur is the first order market, Dadri, Is the third order market while Ghaziabad-Sahibabad, and Muradnagar are the second order markets. The other characteristics of the district have already been included under the discussion centred on Hapur.

Ghaziabad — Shahibabad has a new market site, and is a daily market with Tuesday closing. The population of this market settlement is 5, 11, 759. The settlement has the status of an urban agglomeration. The Mandi Parishad of

U.P. has classed this market as A class. The average annual crop arrival at the market stands at 329 metric tonnes.

Muradnagar also has a new market site, one sub-yard, named Modi nagar which too has a new market site. It is a daily market and remains closed on every Thursday. The market settlement has the urban status of a municipal board with 44, 395 population. The Mandi Parishad has classified it as a C class market which has 44,000 metric tonnes of crop arrival every year.

(iv) Bullandshahr District

In Bullandshahr district, there are as many as 11 markets, the highest number of RAMs in a district in the state,. This district has 55.40 km road-length per 100 km^2 area. The average annual marketable surplus of the district is 685.20 thousand metric tonnes, while the marketed surplus is 170.97 thousand metric tonnes.

The Bullandshahr RAM has a new market site. There is just one sub-yard — Aurangabad — attached with it. The Bullandshahr market is a daily RAM and remains closed on Sunday. The market settlement has a population of 1,27,201 and the status of the market town is that of a municipal board. The U.P. Mandi Parishad has classified this market as a B class market. The market fee collected during a year is Rs. 40,00,00 - Rs. 80,00,000. The average annual crop arrival at this market is 146 thousand metric tonnes.

Jahangirabad RAM is another second order market of this district. It also has a new sub-yard, both the modern facilities, one sub-yard without any new site named Unchgaon and this market meets daily with Friday as weekly closing. The market settlement has a population of 37,981 and the status is that of a municipal board. The UP Mandi Parishad has classified this market as A class market. The market fee collected during a year is Rs. 20,00,000 - Rs. 40,00,000. The average annual crop arrival at this market is 58,000 metric tonnes.

(iv) Rampur District

Rampur district has only three RAMs of which two — Rampur, and Bilaspur — are the second order markets while Shahabad the only third order market is. The district of Rampur has a road-length of 64.46 km per 100 km² area. The marketable surplus of the district is 504.88 thousand metric tonnes per year while the marketed surplus is 289.63 thousand metric tonnes.

None of the markets has a new market site or any modern facilities. Rampur has three sub-yards of which Milak, and Tanda have new market sites also while Swar does not have any new site. This RAM is a daily market with Wednesday as a closing day during the week. The market settlement has a population of 2,43,742 with the urban status of a municipal board. The U.P. Mandi Parishad has classed it has A Special class.The market fee collected during a year is more than Rs. 80,00,000. The average annual crop arrival at this market is 192 thousand metric tonnes. This market is just lagging behind the first order RAMs.

Bilaspur market has only, Kemri sub-yard. This is also a daily market and remains closed on Thursday. This market settlement has a population of 26,463 with the urban status of a municipal board. This RAM has also been classified by the U.P. Mandi Parishad as A Special class market. The market fee collected during a year is more than Rs. 80,00,000. The average crop arrival at this RAM is 197 thousand metric tonnes annually.

(vi) Pilibhit District

In Pilibhit district Bisalpur, and Puranpur are the second order RAMs while Pilibhit itself is a first order RAM. Pilibhit district has thus three RAMs. Bisalpur RAM has a new market site, and four sub-yards namely, Bilsanda, Barkherakalan, Tikrimafi, and Madhwapur are attached with this RAM. This is a daily RAM and has Friday as its weekly closing day. The market settlement has a population of 43,829 with municipal board as its urban status. The U. P.

Mandi Parishad has classed this market as A class market. The market fee collected during a year is between Rs. 40,00,000 and Rs. 80,00,000. The average annual crop arrival is 155 thousand metric tonnes.

The Puranpur market has a new market site. It has one sub-yard named Khemaria. The Puranpur market is a daily market and has Monday as the weekly closing day. This market settlement has a population of 30,439 and the urban status of a municipal board. The RAM has been classified as A Special class by the U.P. Mandi Parishad. The average crop arrival during a year is 271 thousand metric tonnes.

(vi) Agra District

In Agra district, there are 8 RAMs out of which only two are the second order RAMs. The district has a road-length of 50.73 km per 100 km^2 area. The annual marketable surplus of the district is 312.73 thousand metric tonnes while the marketed surplus is 31.16 thousand metric tonnes only. There are 6 third order markets in the district.

Agra has neither a new mandi yard nor has any modern facilities. It has only one, Khandauli, sub-yard. Agra is a daily market and it remains closed on Sunday. It has a population of 9,48,083 with urban agglomeration as its urban status. The U.P. Mandi Parishad has classified it as A Special class market. The average annual crop arrival at this market is 297 thousand metric tonnes. The annual market fee collected at this yard is more than Rs. 80,00,000. Khairagarh is an other second order market of the district. It has a new market yard. Also, there are three sub-yards attached with it. These sub-yards are Iradut Nagar, Latoo khera, and Kagraul. The Khairagarh market is a daily market and remains closed on Saturday. It has a population of 12,939. The settlement has the status of a town area. The U.P. Mandi Parishad has classified this as a B class market. The market fee collected during a year at

this market is between Rs. 20,00,000 and Rs. 40,00,000. The average annual crop arrival at this market is 39 thousand metric tonnes.

(viii) Etah District

Etah district has five RAMs of which two are of the second order while the rest three RAMs are of the third order . The district has 56.14 km road-length per 10 km^2 area. The average marketable surplus is 439.28 thousand metric tonnes per year while the marketed surplus is 150.27 thousand metric tonnes.

Kashganj has C I value of 65.62. It has six sub-yards attached with it. These sub-yards are Sahavar, Soron, Marhara, Amapur, Balrampur, and Mirhachi. It is a daily market which remains closed on Monday during the week. The market settlement has a population of 75,634 while its urban status is that of a municipal board. The U.P. Mandi Parishad has classed it as A class market. The average annual market fee collected during a year at this market is between Rs. 40,00,000 and Rs. 80,00,000. The average annual crop arrival of this market is 1,32,000 metric tonnes. Etah RAM has a C I value of 64.37. It has a new market yards. It has one sub-yard with new market site named, Niddhaulikalan. It is a daily market which remains closed on Tuesday. Its district headquarter is also located at this settlement only. This market settlement has a population of 78,458 and the urban status that of a municipal board. The U. P. Mandi Parishad has classified it as A class market. The annual market fee collected at this market is between Rs. 40,00,000 and Rs. 80,00,000. The annual crop arrival at this RAM is 87 thousand metric tonnes.

(ix) Kanpur Dehat District

Kanpur Dehat district has a total of 6 RAMs of which two are of the second order. This district has 46.97 km road-length per 100 km^2 area. The annual marketable surplus of the district is 519.38 thousand metric tonnes while the marketed surplus is 86.20 thousand metric tonnes.

Rura RAM has a C I value of 55.62, it has a new market yard, also three sub-yards named Akbarpur, Derapur, and Mungisapur. While Akbarpur has a new market site, the others have only the ordinary market sites. Rura is a daily market which remains closed on Sunday during the week. The market settlement has the population of 10,906 and the urban status is that of a town area. The U.P. Mandi Parishad has classed this market as a C class market only. The average annual crop arrival at this RAM is 22 thousand metric tonnes.

Baripal market has a new site, Kisan Bazar facility and two sub-yards namely, Ghatampur, and Nauranga. Both of these sub-yards have new market sites. This market is a daily market which remains closed on Sunday during the week. The population is less than 10,000 and the settlement status is that of a village. The U.P. Mandi Parishad has classed this market as a C class market. The average annual crop arrival of this RAM is 17 thousand metric tonnes.

(x) Barabanki District

Barabanki district has three RAMs of which two — Barabanki, and Safadarganj are of the second order, RAM while Rudauli is a third order RAM. It has a road-length of 45.09 km per 100 km^2 area. The district's annual average marketable surplus is 371.81 thousand metric tonnes while the marketed surplus is 123.69 thousand metric tonnes.

Barabanki market has one sub-yard named Fatehpur which has only the conventional market site. This market is a daily market and remains closed on Sunday. The market settlement has the population of 77,234 and the urban status of an urban agglomeration. The U.P. Mandi Parishad has classified it as A class market and the average annual crop arrival at this RAM is 218 thousand metric tonnes.

Safdarganj is an another second order market of this district. It has a new market site. There are three sub-yards attached with it namely, Dariabad, Tikaitnagar, and Haidergarh. None of these yards has a new market site. The settlement status is that of a village with less than 10,000 population. The U.P. Mandi Parishad has classed it as a B class market. The market fee collected during a year is between Rs. 20,00,000 and Rs. 40,00,000. The average annual crop arrival at this RAM is 57 thousand metric tonnes. This market is a daily RAM and remains closed on Sunday.

(xi) Faizabad District

Faizabad district has only three RAMs of which two are of the second order — Faizabad and Akbarpur. The third RAM Tanda, is a third order RAM. This district has a road-length of 48.57 km per 100 km^2 area. The average annual marketable surplus of the district is 414.48 thousand metric tonnes while the marketed surplus is 119.15 thousand metric tonnes.

Faizabad market has a new market site, it has two sub-yards namely Gosainganj, and Zuberganj. It is a daily market which remains closed on Thursday. The population of the market settlement is 1,76,922 and the status of the city is that of an urban agglomeration. The U. P. Mandi Parishad has classified it as A class market. The annual crop arrival of this market is 158 thousand metric tonnes.

Akbarpur is another second order market of this district. It has four sub-yards attached with it. These sub-yards are Jalalpur, Katehari, Ariya Bazar, and Pratapur - Charmrakha. It is a daily market which has Sunday as its weekly closing day. The population of this market settlement is 26.878 while the status of the settlement is that of a municipal board. The U.P. Mandi Parishad has classed it has A class market. The average annual crop arrival at this is 99 thousand metric tonnes.

(xi) Sultanpur District

Sultanpur district has only two RAMs of which both are the second order RAMs. The road-length of the district is 56.15 km per 100 km² area. The average marketable surplus of the district is 244.64 thousand metric tonnes annually while the marketed surplus is 19.19 thousand metric tonnes.

Jafarganj has a new market site, it has a grading facility also and U.P. Mandi Parishad has classified it as a B class market. The market fee collected during a year is Rs. 20,00,000 — Rs. 40,00,000. The average annual arrival of this market is 79 thousand metric tonnes. The status of this market is that of a village which has a population below 10,000.

Sultanpur is another second order market of the district . It has a new site sub-yard namely Amethi. The population of the market settlement is 76,533 and the status of the city is that of a municipal board. The annual market fee collected at this RAM is between Rs. 20,00,000 and Rs. 40,00,000. The U.P. Mandi Parishad has classed it as a B class market. The average annual crop arrival is 76 thousand metric tonnes.

(xii) Maharajganj District

In Maharajganj district, there are four RAMs of which Partawal, and Nautanva have the second order status while both the rest — Anandnagar, and Garaura — are the third order RAMs.

Partawal has a new market site, Kisan Bazar facility, and two ordinary sub-yards namely Maharajganj, and Paniyara. It is a daily market which remains closed on Sunday. It has a population of 17,430 and the status of the settlement is that of a village. The market has been classed as B class by the U.P. Mandi Parishad. The annual crop arrival of this RAM is 98 thousand metric tonnes.

Nautanva, the another second order market has a new market site, grading facility, and has two ordinary sub-yards namely Bargarhwa, and Ekma. It is a daily market and remains closed on Sunday. The market settlement has a population of 21,787 and the status of the city is that of a municipal board. This RAM has been categorised by the U.P. Mandi Parishad as C class and has the annual crop arrival of 26 thousand metric tonnes.

(xiv) Jaunpur District

In Jaunpur district there are three RAMs of which two — Jaunpur, and Shahganj are the second order RAMs. The only third order RAM of the district is Mungara-Badshahpur. The district has a road-length of 67.36 km per 100 km^2 area. The annual marketable surplus of the district is 286.39 thousand metric tonnes while the marketed surplus is 9.24 thousand metric tonnes.

Jaunpur is lagging behind the first order RAMs. It has a new market yard. There are five sub-yards attached with this RAM. These sub-yards are Gauri Badshahpur, Jafrabad, Nau Perwa, Kairakal, and Mandiyahu. It is a daily market and remains closed on Sunday. The market settlement has a population of 1,36,063 and the status of the market settlement is that of a municipal board. The U.P. Mandi Parishad has classified it as a B class market. The annual crop arrival at this market is 1·13 thousand metric tonnes.

Shahganj is another second order market. It has a new market site, Kisan Bazar facility and three ordinary sub-yards namely, Phulpur, Khetasarai, and Badlapur Khurd are also there. It is a daily market and remains closed on Sunday. The population of this market settlement is 19,992 and the status of the settlement is that of a municipal board. The U.P. Mandi Parishad has classified it as a B class market. The average annual crop arrival of this market is Rs. 47 thousand metric tonnes.

(xv) Varanasi District

In Varanasi district, there are three RAMs of which one, Varanasi, is the first order RAM, while the other two RAMs — Gopiganj, and Chandauli are the second order RAMs.

Gopiganj has a new market site, and two ordinary sub-yards namely Bhadohi, and Suriyavan. It is a daily market and remains closed on Sunday. It has a population of 15, 035 and the status that of a municipal board. The Mandi Parishad has classified it as a B class market of which annual crop arrival is only 25 thousand metric tonnes.

Chandauli, the other second order market of the district, has four sub-yards namely Chakia, Sakaldiha, Saiyyadraja, and Baburi. It is a daily market and remains closed on Tuesday. The population of this market settlement is 11,039 and the status is that of a town area. The Mandi Parishad has classed it as a C class market which has 35 thousand metric tonnes as the average annual crop arrival.

V. Single-RAM-Districts

There are 16 districts which have just one RAM each. These districts and the RAMs with necessary informative hints on C I value, market site, facility, closing day, Population, status, market class, and annual crop arrival are as follows.

(i) Dehradun/Rishikesh : 65.00, New, Kisan Bazar, Thursday, 71,704, urban agglomeration, B, 109 thousand metric tonnes.

(ii) Saharanpur/Gongoh : 53.75, Old, Kisan Bazar, Wednesday, 41,198, municipal board, B, 64 thousand metric tonnes.

(iii) Bareilly/Baheri : 66.87, new , nil, Sunday, 46008, municipal board, A, 598 thousand metric tonnes, and one ordinary sub-yard Richha.

(iv) Shahjahanpur/Pawayan : 73.75, New , Kisan Bazar, Saturday, 18120, town area, A special, 340 thousand metric tonnes, and two new sub-yards namely Banda, Baragaon-Nawabpur, and two ordinary sub-yards namely Khuddar, and Jamunia-Sunderpur.

(v) Mathura/Kosikalan : 57.50, New, Grading unit, Sunday, 31,293, municipal board, B, 88 thousand metric tonnes, and three sub-yards — Shergarh, Chhata, and Barsana.

(vi) Gonda/Balrampur : 53.75, ordinary, Kisan Bazar, Sunday, 59,619, municipal board, B, 53 thousand metric tonnes.

(vii) Basti/Basti : 64.37, new , nil, Monday, 87,371, municipal board, A, 100 thousand metric tonnes and ordinary sub-yards — Mathkhia Bazar and Bhabhnan.

(viii) Deoria/Barhaz bazar

(ix) Azamgarh/Azamgarh : 63.75, new , nil, Sunday, 78.567, municipal board, B, 34 thousand metric tonnes, and 5 sub-yards namely Maharajganj, Nariya, Atraulia, Lalganj, and Mubarakpur.

(x) Fatehpur/Fatehpur : 53.12, new, Sunday, 1,17,675 municipal board, C, 40 thousand metric tonnes, and one ordinary sub-yard Hussainganj.

(xi) Pratapgarh/Pratapgarh : 75.00, new , Kisan Bazar, Sunday, 65,945, municipal board, B, 63 thousand metric tonnes, and 5 ordinary sub-yards namely Kalakankar, Antu-Ramganj, Majhilgaon, Kunda, and Raniganj-Kaithola.

(xii) Allahabad/Jasra : 55.65, new, Kisan Bazar, Sunday, Village, C, 18 thousand metric tonnes and 4 sub-yards namely Jari (new yard), Naribari, Shankargarh, and Bharat nagar.

(xiii) Ghazipur/Jangipur : 58.75, New, Tuesday, town area, 8257, B, 59 thousand metric tonnes and four sub-yards namely Dullapur (new yard), Ghazipur, Jallalabad, and Nandganj-Jhakhania.

(xiv) Sonbhadra/Robertsganj : 61.25, new, grading unit and Kisan Bazar, Wednesday, 20,769, municipal board, B, 41 thousand metric tonnes and one new sub-yard, Ghorawal.

(xv) Banda/Atara : 62.50, new, grading unit, Friday, 33.640 municipal board, B, 56 thousand metric tonnes and three sub-yards namely Khurhand, Naraini, and Bisanda.

III. Third Order RAMs

The third order RAMs are the lowest in the present context as there are only three tiers of hierarchy. Following the first and second order RAMs numbering 30, and 96 respectively, there are 136 third order RAMs in the state. These RAMs have their C I values upto 50 each. All these RAMs are located in 54 districts meaning thereby that there are no third order RAMs in 9 districts. These nine districts are ; Nainital, Pilibhit, Aligarh, Kanpur Nagar, Sultanpur, Basti, Azamgarh, Pratapgarh, and Varanasi.

These markets have low weight in every case of parameters, taken under consideration. Some of such characteristic features are : all such RAMs have only an old or ordinary market place/site. There are, in general, no modern facilities present at these market sites. As regards, the number and nature of sub-yards, these markets have either less than three-four ordinary sub-yards or less than two sub-yards with new sites. The periodicity, however, is daily as there are only seven markets which have their periodicity, less than daily.

Thus, in a way, almost all the RAMs have daily periodicity. Most of these RAMs are of town area level of urban status, and some, of course, have village status too. The population of these market settlements is generally below 50,000. The road-length of the districts having such markets is below 45 km per 100 km^2 area each. The market fee collected at these RAMs is generally below Rs. 40,00,000 each. In many cases, it is below even Rs. 20,00,000 per annum. The average annual crop arrival at such RAMs is, in general, below 50 thousand metric tonnes each. The U.P. Mandi Parishad has classified these markets either as B class, or as C class too. The diagrammatic sizes of various third order RAMs have been represented through Figure 26.

It is quite interesting to note that two cases of hill districts, namely Uttarkashi, and Chamoli have the lowest C I values of 19.37, and 16.87 respectively. Otherwise all the RAMs of this order have C I values above 20 and upto 50. There exist three RAMs which have their C I values below 30. As regards the score on the particular parameters, these RAMs have, generally, secured less than the second order RAMs in every case.

Six hill districts namely Uttarkashi, Tehri Garhwal, Pauri Garhwal, Pithoragarh, Chamoli, and Almora have just one RAM each and that too, falling under the third order hierarchical tier. Nainital has no third order market as there are 9 RAMs of which 6 falls under the first order while remaining three are under the second order .

Pilibhit district has three RAMs out of which one is of the first order and the rest two of the second order. Thus, it does not have any third order market. Aligarh also does not have any third order market as it has six markets out of which two are of first order and four are of second order.

Kanpur Nagar district has just one market and that too falls under the first order. Sultanpur district has two markets both of which are of second order,

UTTAR PRADESH REGULATED AGRICULTURAL MARKETS
THIRD ORDER - DIAGRAMMATIC SIZE

ANOOPSHAHR

NAKUR

ALMORA

KARWI

SAHJANWA

MEHMOODABAD

A - SITE
E - POPULATION

B - FACILITIES
F - ROAD LENGTH

C - SUB-YARD
G - MARKET FEE

D - PERIODICITY
H - ARRIVALS
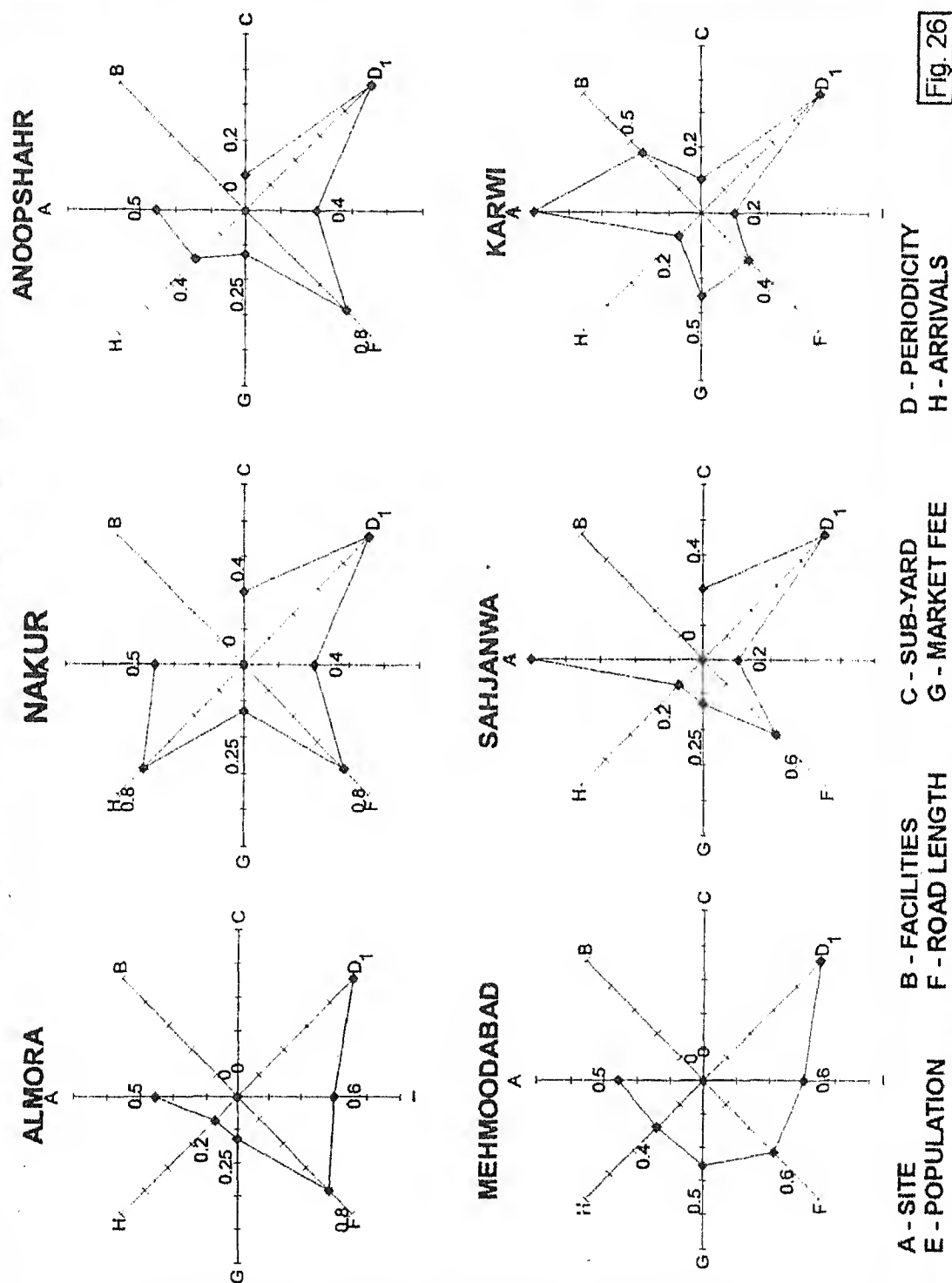
Fig. 26

Basti district has just one market which falls under the second order. Azamgarh district also has just one market which also falls under second order. Pratapgarh district also has the same feature. Varanasi district has three RAMs out of which two are of the second order and one of the first order. Thus, there are nine districts which absolutely have no third order RAMs. Table 7.3 shows the number of districts and the RAMs under various sub-classes of the third order.

Table 7.3 : U.P. : Hierarchy — Third Order RAMs.

C I Value in	Number of Districts	Number of RAMs
Tens	2	2
Twenties	1	1
Thirties	20	28
Forties — Early forties	14	18
Mid forties	30	44
Late forties	11	18
Fifty only	20	25

The following list gives the various details of the C. I. values of this order RAMs in brackets :

C I value in tens	Uttarkashi, and Chamoli districts (Uttarkashi 19.37, Chamoli, 16.87) = 2 RAMs of 2 districts.
Twenties	Tehri Garhwal (Tehri 24.37) = one RAM of one district.
Thirties	Dehradun (Chakrata 36.87) Pauri Garhwal (Kotdwar

38.75), Pithoragarh (34.75), Almora (39.37), Bullandshahr (Dankaur, 36.87), Saharanpur (Chhutmalpur 39.37), Mainpuri (Ghiraur 36.87), Hardoi (Sandi 39.37), Sitapur (Hargaon, 36.87; Maholi 36.87, Misrikh 36.87, Sidhauli 31.87), Unnao (Purwa 38.12) Raebareli (Salon 39.37), Bahraich (Mihirpurwa, 31.87, Rupaidiha, 34.37, Risia 34.37, Payagpur 31.87), Gonda (Pachpurwa 36.87, Utraula 39.37), Siddharthnagar (Naugarh 36.87, Shohratgarh 36.87), Maharajganj (Garaura 34.37) Fatehpur (Khaga 36.87), Jhansi (Baruasagar 36.87), Jalaun (Kadaura, 35.62), Hamirpur (Panwari, 31.87), Banda (Mau 34.37) = 28 RAMs of 20 districts.

Forties upto 43	Saharanpur (Sultanpur-Chilkana 40.62, Nanauta 40.62), Budaun (Babrala 40.62), Bareilly (Aonla 40.67), Mathura (Sadabad 41.87), Agra (Shamshabad 41.87, Fatehabad 41.87, - Jerar 41.87), Firozabad (Tundla 41.87), Kanpur Dehat (Uttaripura 41.87) , Kheri (Tikonia 42.50), Lucknow (Banthara 41.87), Gonda (Colonelganj, 41.87), Siddharthnagar (Bansi 41.87), Ballia (Chitbaragaon 41.87), Fatehpur (Jehanabad, 41.87), Hamirpur (Kurara 40.62, Bharwa-Sumerpur 40.00) = 18 RAMs of 14 districts.
-More than forty-eight (Underlined districts in forties)	: Saharanpur (Rampur Maniharan 48.12, Deoband 48.87), Muzaffarnagar (Thanabhavan 48.87, Kairana 48.12, Khandla 48.87, Shahpur 48.87), Meerut (Sardhana, 50.00) , Ghaziabad (Dadri 50.00), Bullandshahr (Gulawati 4812, Sikandarabad 49.50, Kurja 50.00, Shikarpur 50.00, Debai, 50.00),

Bijnor (Nagina 50.00, Bijnor, 49.37), Moradabad (Dhanaura 48.12), Shahjahanpur (Jalalabad 50.00), Agra (Achhnera 48.12, Fatehpur Sikri 48.12, Jagner 48.12), Etah (Awagarh 48.12, Aliganj 50.00), Firozabad (Firozabad 50.00, Shikohabad, 50.00), Mainpuri (Bewar 50.00), Etawah (Dibiapur 50.00), Kanpur Dehat (Jhinjhak 50.00, Pokharaya 50.00), Sitapur (Biswan 50.00), Unnao (Bangarmau 50.00, Unnao 49.37), Gonda (Gonda 50.00), Maharajganj (Anandnagar 49.37), · Jaunpur (Mungara-Badshahpur 50.00) Ballia (Bilthara Road 5.00), Fatehpur (Bindiki 50.00), Allahabad (Sirsa, 49.37), Ghazipur (Yusufpur 50.00, Zamania 49.37), Mirzapur (50.00), Jalaun (Kalpi 50.00), Banda (Baberu 50.00, Karwi 50.00) = 42 RAMs of 26 districts

The observations about the C i values of these RAMs make it obvious that out of 136 third order RAMs, two markets — Uttarkashi and Chamoli have their values below 20. Just one market in entire state, Tehri Garhwal has its value in twenties. There are 28 RAMS located in 20 districts which have their C I values ranging through thirties. As many as 81 RAMs have their such values ranging through forties, while 24 markets have the same just as high as fifty in this order. Thus, there are 24 RAMs just on the margin meaning thereby that any fractional addition in these values of these RAMs would have changed the order of the markets from third to second.

8. TRADE AREA

8.1 INTRODUCTION

The economic activity resulting from the process of production, distribution and consumption gives rise to market centres. The exchange take place at convenient points of focus for producers and consumers who keep visiting these points/centres in order to carry out their business activity. Thus, the importance of a market is dependent upon producers and consumers who in turn are independent on space on which they live. Therefore, in the spatial context, the area or space from where the inhabitants interact with the particular point of focus or the market is known as the 'trade area of the market . The other words used in the same reference are : influence area, catchment area, command area, service area, hinterland, and market area (Dixit, 1988, p. 189).

8.2 OBJECTIVE

It must be mentioned that the trade area can also be expressed in terms of population, and in terms of the number of inhabited villages too. The population of the space (or the surface area) which comes under the influence of a market can also be termed as its trade area in the context of population. Likewise, the number of inhabited villages where such people live can also be referred as a trade area of a particular market. People have the interaction, they live in various settlements which are located over the space — thus, trade area can be referred in three ways : the trade area in areal context , the trade area in population context, and the trade area in the context of number of villages. The objective of the present effort is to work out theoretically such trade areas of the regulated agricultural markets — RAMs — of U.P.

The RAMs are the contrived markets (Johnson, 1976, pp.101). The RAMs have already got defined their trade areas known as 'notified areas'. These areas have already been notified by the state government. The notified area has a number of villages earmarked by the government. Thus, a particular RAM has its own trade area. But it has been observed that the farmers of these villages do not bring all of their agricultural produce to the particular market rather, they prefer to go to other markets too for one reason or the other. Thus, although, the notified areas are already marked by the government yet there is no hard and fast rule that the farmers bring their total produce for sale at the particular market. Johnson also says that there may be lack of coincidence between the notified market area and the actual transactional area.

Such an approach has been quite common and has also been used for presenting the trade area in terms of particularly the space/the land area, the particular population as also the inhabited villages (Dixit, 1984, pp. 137-142; 1988, pp. 189-209; and Saxena 1992, pp. 60 - 62). The present endeavour primarily, is centered on working out the theoretical trade areas of RAMs in terms of area, population, and the number of inhabited villages.

8.3 METHODOLOGY

The area of the state is quite big, on the other hand the number of RAMs is also not small, 262, the empirical observations and studies could not be applied to this case to delineate the trade area boundaries for want of funds, and time. Hence, theoretical trade areas have been worked out.

A RAM is meant particularly for farmers (although the other functionaries are also there). Hence, it serves a certain number of people i.e population. In other terms, the farmers live in some villages, hence a market serves a number of villages from where these farmers come to the RAM. Thus, a market serves a particular space consisting of a number of villages where live

a certain number of people. Therefore, the trade area of a RAM has been theoretically found out in terms of space, inhabited villages, and population. The theoretical exercise has become necessary because of the various variables like commodities, range of goods, transport cost, and legislative or administrative efforts. The average physical area, the average number of population, and the average number of inhabited villages served by each RAM have been computed at the district level for the state. This gives the average trade areas of RAMs of each district of the state (Table 8.1) in the said 3 contexts as these have not been possible in delineating the physical boundaries of the trade areas of regulated markets. In fact, the jurisdictional and transactional boundaries seldom coincide (Johnson, 1976, p. 110).

In the spatial context, the total area of a district was divided by the number of RAMs of the same district; in the population context, the total number of persons of a district has been divided by the number of RAMs of the same district. Likewise, in the village context, the number of inhabited villages of a district has been divided by the number of RAMs again, of the same district. The simple statements with regard to respective formulations have, thus, come out as follows :

(i) Trade area in terms of km^2 = Area in Km^2 of a district /number of RAMs of the same district.

(ii) Trade area in terms of number of villages = number of inhabited villages of a district/number of RAMs of the same district.

(iii) Trade area in terms of population = total number of persons of a district/number of RAMs of the same district.

Besides the application of simple formulations mentioned above, another exercise has also been done through measuring statistically, the general/average space/population/ number of villages served by a RAM in a

particular district. This has been done for all the districts of U.P. In each of these cases of area, population,and villages, the mean has been worked out and the deviations from the mean have also been calculated upto the extent of three — in both the positive and negative sides.

8.4 TRADE AREA

The average physical area, the average number of population, and the average number of inhabited villages served by each RAM have been computed at the district level for the state. This gives the average trade areas of RAMs of each district in U.P. (Table 8.1) in the said three contexts.

Table 8.1 : U.P. : Trade Area of RAMs

District Sl. No.	Trade Area Per RAM			District Sl. No.	Trade Area Per RAM		
	Area Km^2	Pop. ('000)	Villages (No.)		Area Km^2	Pop. ('000)	Villages (No.)
1.	8016	240	678	33.	1197	549	376.6
2.	772	256	185	34.	820.4	408	330.6
3.	4421	580	1959	35.	1519	733	564.3
4.	5438	683	3205	36	12.64	1381	412.0
5.	9126	455	1569	37.	921.8	464	347.2
6.	8856	566	2186	38.	1146	460	315
7.	5385	837	3024	39.	1467	807	683.3
8.	755	171	199.9	40.	1050	510	402.6
9.	461.1	288	159.7	41.	1503	992	882.3
10.	787	374	167.7	42.	2218	1279	1247
11.	572.6	406	146.3	43.	3733	2739	4504
12.	782.2	689	180	44.	873.8	427	609.3
13.	647.5	676	171.2	45.	1108	1022	960
14.	395.6	259	123.5	46.	737	419	301.8
15.	651.5	350	304.5	47.	2722	2220	1775
16.	852.4	588	353.5	48.	1346	1071	1089
17.	789.0	500	366	49.	4234	3154	3721
18.	646.0	306	222.5	50.	856.5	723	736
19.	1373	945	617	51.	745.3	565	448
20.	1166	427	403	52.	830.2	379	270
21.	1143	496	532.5	53.	3717	2211	2181
22.	836.5	549	284.3	54.	1452	984	707.8
23.	1270	643	290.3	55.	1697	1620	1234
24.	503.3	343	113.1	56.	844.3	604	645.8
25.	889.2	449	301.4	57.	2261	828	861
26.	590.2	383	198.7	58.	3394	537	673
27.	920.0	146	275.3	59.	2519	376	344.5
28.	721.0	354	240.5	60.	837	238	126.7
29.	712.3	406	261.8	61.	652	174	134.6
30.	851.8	356	270.3	62.	1023	209	132.3
31.	1065	2418	247	63.	1524	372	340.8
32.	1280	503	285.3	U.P.	**112.4**	**531.0**	**430.6**

Note :

The serial number of district follows the order of the district-names shown in Appendix 2.

8.4.1 Theoretical — General

Under this approach, as has already been mentioned, the simple formulations/statements measuring the trade areas have been applied in all the cases. In all of these cases five classes of the trade areas have been observed : the districts with markets having very small areas, the districts with markets having small trade areas, the districts with markets having medium trade areas, the district with markets having large trade areas, and the districts with markets having very large trade areas.

I. Trade Area in Areal Context

In this context, the trade area relates to the spatial area it serves at the district level. The total area of the district is divided by the number of markets located in the district concerned. The results give the trade area per market served in the said district. Going through the computation in this context, the districts have been divided into five classes : Very small trade area with areal coverage upto 500 km^2 , Small trade area with areal covereage of 500 km^2 — 1000 km^2, Medium trade area with areal coverage of 1000 km^2 -1500 km^2. Large trade area with areal covereage of 1500 km^2 - 2000 km^2, and Very large trade with areal coverage with more than 2000 km^2. These details have been shown in Table 8.2.

Table 8.2 : U.P. : Theoretical Trade Area of RAMs — General : Areal Context

Trade Area Class	Number of Districts	Number of RAMs	Percentage of RAMs
(I) Very Small Trade Area	2	19	7.25
(Ii) Small Trade Area	28	150	57.25
(Iii) Medium Trade Area	16	63	24.06
(Iv) Large Trade Area	3	11	4.19
(V) Very Large Trade Area	14	19	7.25
Total	63	262	100.00

I. Very Small Trade Area

This class includes the districts of which RAMs have their trade areas upto 500 km^2 each. However, there are only 2 districts — Saharanpur, and Bullandshahr which fall under this class. Saharanpur has 8 RAMs and has on an average 461 km^2 per RAM as the trade area while in case of Bullandshahr which has as many as 11 RAMs, the average trade area is of 395 km^2 per RAM. Bullandshahr has the largest number of RAMs in the entire state, hence, the average space per RAM has been rather very small. There are 19 RAMs under this class which have a percentage of 7.25 in the state.

II. Small Trade Area

This class is the largest class amongst all. It has as many as 28 districts. The range of area of this class is 500-1000 km^2 per RAM. The districts included in this trade area class are Dehradun, Nainital, Hardwar, Muzaffarnagar, Meerut, Ghaziabad, Bijnor, Moradabad, Rampur, Budaun, Aligarh, Agra, Etah, Ferozabad, Mainpuri, Etawah, Farrukhabad, Kanpur Dehat, Sitapur, Raebareli, Siddharthnagar, Maharajganj, Mau, Ballia, Fatehpur, Ghazipur, Jhansi, and Jalaun. Out of these, two are located in the hill region, two in the Bundellkhand region and rest in the U.P. plain region. Again out of the U.P. plain region districts, 13 are located in the western U.P. , 5 in the central U.P. and 6 in the eastern part of U.P. It has been observed that, generally, the numbers of markets in these districts vary from 3 to 8 except in Mau, which has only two RAMs, and Nainital, which has nine such RAMs. The percentage of RAMs under this trade area class is 57.25, the biggest one. The total number of the RAMs in this class is 150.

III. Medium Trade Area

This class has the range between 1000 km^2 and 1500 km^2 area. The medium size trade-area-market-districts are the second highest in the series. There are 16 such districts named as Bareilly, Pilibhit, Shahjahanpur, Mathura,

Kanpur Nagar, Kheri, Hardoi, Lucknow, Bahraich, Barabanki, Gonda, Gorakhpur, Jaunpur, Allahabad, Varanasi, and Hamirpur. Out of these districts, the first four belong to western U.P. plain, the next four to central plain, and seven to the eastern plain while one, Hamirpur, is located in Bundelkhand region. Under this class the most of the districts have three RAMs each excepting Gonda, and Hamirpur (with seven each); Kheri, Bahraich, (six each); Hardoi, Allahabad, (five each); Shahjahanpur, Lucknow, and Kanpur Nagar with four, two, and one respectively. The total number of RAMs is 63 in this class. The percentage of RAMs falling under this class is 24.06 i.e., nearly one-fourth of total markets have medium type of trade area in the state.

IV. Large Trade Area

The range of this class is from 1500 km^2 to 2000 km^2 area as the trade area of each market. Only 4.19 per cent RAMs have trade area of this type. However, there are three districts only in this class, Unnao, Faizabad, and Banda. Of these Banda has five RAMs while Unnao and Faizabad have three each. Thus, there are 11 RAMs in this class.

V. Very Large Trade Area

This class has the trade area bigger than 2000 km^2 each. This is the largest spatial class of trade area. As regards the number of districts, 14, this stands third following the second class with 28 districts and the third class with 16 districts. The districts of Sultanpur , Deoria, Mirzapur, and Lalitpur have two markets each and their trade areas vary between 2000 km^2 and 3000 km^2. Three districts — Basti, Pratapgarh, and Sonbhadra with one RAM each in the first two, and two RAMs in the last one, have their trade areas rather bigger varying between 3000 km and 4000 km^2. It has been observed that very large trade areas have been found with the RAMs of the districts like Uttarkashi, Tehri Garhwal, Chamoli, Pauri Garhwal, Pithoragarh, Almora, and Azamgarh. The reason behind this being the physiography of the region as

the six districts fall in the hilly region. Further, it is important to mention that all these districts have only one RAM each. Due to the terrain, the areal coverage is too large under these as the total area of each district has been included only in one RAM each in all these cases. Chamoli, district has as large the area as 9126 kms^2 . The others are as follows : Pithoragarh (8856 km^2), Uttarkashi (8016 km^2), Pauri Garhwal (5438 km^2), Almora (5385 km^2), Tehri Garhwal (4421 km^2) , and Azamgarh (4234 km^2). This trade area class has 7.25 RAMs of the state within it.

II. Trade Area In Population Context

In this context, the trade area of a RAM refers to the number of persons, the particular market serves. In this case, the total population of the district is divided by the number of RAMs located in the concerned district. The results give the number of persons served by a RAM of the district — In other words, it is the trade area in terms of population.

Just like the above case, in this case also, the districts have been divided into five classes of trade areas of RAMs as follows : Very small trade area with a population upto 2,50,000 : Small trade area with population from 2,50,000 to 5,00;000; Medium trade area from 5,00,000 to 7,50,000 population; Large trade area from 7,50,000 to 10,00,000 population; and Very large trade area with more than 10,00,000 population each . The details of these have been given in Table 8.3 .

Table 8.3 : U.P. : Theoretical Trade Area of RAMs — General : Population Context

Trade Area Class	No. of Districts	No. of RAMs	Percentage of RAMs
(I) Very Small Trade Area	6	33	12.60
(Ii) Small Trade Area	25	135	51.52
(Iii) Medium Trade Area	16	58	22.13
(Iv) Large Trade Area	6	17	6.49
(V) Very Large Trade Area	10	19	7.26
Total	63	262	100.00

I. Very Small Trade Area

The range of this class as has already been shown is upto 2,50,000 people, meaning thereby that each of the RAMs serve a population upto 2,50,000 people. There are six districts in this class named Uttarkashi, Nainital, Mainpuri, Jhansi, Jalaun, and Hamirpur. Amongst these, Nainital has nine RAMs ; Jalaun, and Hamirpur have 7 each ; Jhansi has 6 RAMs; and Mainpuri has 3 RAMs ; while Uttarkashi has just one such RAM. The population is small in this class as two districts are located in hill region while three are in the Bundelkhand. Only Mainpuri is the district located in the western plain of U.P. These districts are characterised by less population, hence the trade area in terms of population is the smallest. This class of trade area has 12.60 per cent of all the RAMs. A total of 33 RAMs are there in this class.

II. Small Trade Area

The extents of this class is upto 5,00,000 persons per RAM (but above 2,50,000 persons). This is the second class in the series and it has 25 districts. Thus, in terms of number of districts, this class is the largest one. The districts which are included in this class are : Dehradun, Chamoli, Saharanpur, Hardwar, Muzaffarnagar, Bullandshahr, Bijnor, Budaun, Pilibhit, Shahjahanpur Agra, Etah, Firozabad, Etawah, Farrukhabad, Kanpur Dehat, Kheri, Sitapur, Raebareli, Bahraich, Siddharthnagar, Mahrajganj, Fatehpur, Lalitpur, and Banda. In these the first two districts are of the hill region both of which have small populations, the last two also are the Bundelkhand districts characterised by small populations again, the rest are located in the plain region of U.P. Of these ten districts belong to western plain, six to central plain, and rest four to the eastern plain. Bullandshahr has the largest number of RAMs, while Shahjahanpur, Budaun and Agra have eight RAMs each. Bijnor, and Sitapur have seven RAMs each. Etawah, Farrukhabad, Kanpur Dehat, Kheri, and Bahraich have six such RAMs each. Besides, the Bundelkhand districts — Hamirpur and Jalaun — also have 7 each, while Jhansi 6, and Banda has 5. This class has the highest number of markets, 135 (51.52 percent) Thus, more than half of the total RAMs fall under this class meaning thereby that all of these markets have their trade areas, rather, small in size.

III. Medium Trade Area

This is the third class of the series and it has the range of 5,00,000 persons to 7,50,000 persons per RAM trade area. There are 16 districts in this class of which RAMs serve a population between 5,00,000 and 7,50,000 each. The 16 districts of this class are : Tehri Garhwal, Pauri Garhwal, Pithoragarh, Meerut, Ghaziabad, Moradabad, Rampur, Aligarh, Mathura, Hardoi, Unnao, Gonda , Mau, Ballia, Ghazipur, and Sonbhadra. In this class, while the three hill

have one market each; Mau and Sonbhadra have two RAMs each; Mathura, Unnao, and Rampur have three RAMs each; Ghaziabad, Ghazipur, and Ballia have four RAMs each; Meerut, and Hardoi have five RAMs each; Aligarh has 6 RAMs, while Moradabad, and Gonda have seven RAMs each. This is the second largest class. In terms of number of districts as it follows the second class having 25 districts in terms of the number of markets, it stands second again with 22.13 percentage of markets following the first class with 51.52 percent of markets. The total number of markets in this class is 58.

IV. Large Trade Area

This is the last but one class of the series. The expanse of this class in terms of population number is 7,50,000 - 10,00,000 (persons). This trade area class has only six districts similar to the first class but the number of markets in this class is about half of the number of the first class as this class has only 17 markets. The percentage of the markets with such large trade areas is just 6.49. The six districts falling under this class are Almora, Bareilly, Barabanki, Faizabad, Allahabad, and Mirzapur. Amongst these Almora has one RAM, Allahabad 5, Mirzapur 2 while all the rest districts have three each such markets.

V. Very Large Trade Area

This is the last class in the series. The expanse of the class in terms of population number is not limited but it is beyond 10,00,000 person. This class has ten districts while the number of RAMs is 19 showing that 7.26 percent RAMs have the largest trade area in the state. The names of 10 districts of this trade area class are : Lucknow, Sultanpur, Gorakhpur, Jaunpur, Varanasi, Kanpur Nagar, Deoria, Basti, Pratapgarh, and Azamgarh. The largest number of persons is covered by Azamgarh market as there is just one market in the district, hence, the entire population of the district has been included in this trade area. The same is the case with Kanpur Nagar, Basti,

and Pratapgarh too. Sultanpur, Lucknow, and Deoria have two RAMs each while Gorakhpur, Jaunpur, and Varanasi have three RAMs each under this trade area class. Therefore, the trade areas are very large.

III. Trade Area In Village Context

Just similar to the above two cases, the number of villages located in the district is divided by the number of RAMs of the same district. The results show the number of villages served by each market in the district, the trade area in terms of the number of villages.

Again, just similar to the above two cases, RAMs serving the number of villages have been divided into five classes from very small to very large trade area. The details have been shown in Table 8.4. The five classes of trade areas on the basis of number of villages are as follows : Very small trade area upto 250 villages. Small trade area, 250 — 500 villages; Medium trade area, 500 — 750 villages; Large trade area, 750 — 1000 villages, and Very large trade area has more than 1000 villages.

Table 8.4 : U.P. : Theoretical Trade Area of RAMs — General : Village — Context

Trade Area Class	Number of districts	Number of RAMs	Percentage of RAMs
(I) Very Small Trade Area	17	103	39.31
(Ii) Small Trade Area	21	102	38.93
(Iii) Medium Trade Area	10	31	11.83
(Iv) Large Trade Area	3	8	3.05
(V) Very Large Trade Area	12	18	6.88
Total	63	262	100.00

I. Very Small Trade Area

In terms of number of villages per market in this class, the limit is upto 250 villages. That is to say, the districts with upto 250 villages per market have been included in this class. Also, that the RAMs falling under this have such a small trade area each as only of upto 250 villages. There are 17 districts in this class. These districts are Dehradun, Nainital, Saharanpur, Hardwar, Muzaffarnagar, Ghaziabad, Bullandshahr, Budaun, Agra, Firozabad, Etawah, Kanpur Nagar, Jhansi, Jalaun, Hamirpur, and Banda. The first two districts belong to the hill region, and the last four districts belong to the low hills of Bundellkhand area. Of the rest eleven districts Etawah, and Kanpur are in the central U.P., while the rest are located in the western U.P. Thus, there are no districts located in the eastern U.P. Under this class there are 103 RAMs constituting 39.31 percent of the total RAMs of the state. This is the top most class in terms of number of RAMs but second in terms of number of districts which follows the second sub-class having 21 districts. Thus, these are the very small trade areas which the various districts of U.P. have in terms of number of villages. The number of markets in various districts run from 1 to 11, the largest expanse. Kanpur Nagar district has one RAM , while Bullandshahr has as many as eleven. The Nainital district has 9 RAMs; Saharanpur, Budaun, and Agra districts have 8 each; while Muzaffarnagar, Jalaun, and Hamirpur have 7 RAMs each. Etawah, and Jhansi districts have six RAMs each; and Meerut, and Banda have 5 RAMs each; Ghaziabad and Firozabad have four RAMs each while Hardwar has just three RAMs with the very small trade area.

II. Small Trade Area

This trade area class runs from 250 villages to 500 villages per RAM and it is termed as the small trade area class. The number of districts with such markets of which trade area include the said range of villages is 21. Thus, this is the largest class in terms of number of districts. It ranks second in terms of

number of RAMs which is 102 just following the first ranker which has 103 RAMs. The districts which are included in this class are Bijnor, Moradabad, Rampur, Pilibhit, Aligarh, Mathura, Etah, Mainpuri, Farrukhabad, Kanpur Nagar, Kheri, Hardoi, Sitapur, Lucknow, Raebareli, Bahraich, Maharajganj, Gonda, Ballia, Fatehpur, and Lalitpur. Out of these the first 8 are included in the western U.P. plain, the next 7 are included in the central U.P. plain, the last one in the Bundelkhand region while all the rest five are included in the eastern U.P. region. The percentage of the markets which have the small trade area is 38.93, the second largest in the series. Amongst these districts Bijnor, Moradabad, Sitapur, and Gonda have seven RAMs each; Aligarh, Farrukhabad, Kanpur Dehat, Kheri, and Bahraich have six RAMs each; Etah, Hardoi, Raebareli, and Fatehpur have five RAMs each; Maharajganj and Ballia have four RAMs each; Rampur, Pilibhit, Mathura, and Mainpuri have three each; and Lucknow, and Lalitpur have two RAMs each. Thus, four districts have seven RAMs each, five districts have six RAMs each, four have five RAMs each, two have four each, four have three each, and two districts have two RAMs each which have the small trade areas.

III. Medium Trade Area

This is the third class in the series. The number of villages in this class run from 500 to 750. There are ten districts in this class namely Uttarkashi, Bareilly, Shahjahanpur, Unnao, Barabanki, Siddharthanagar, Mau, Allahabad, Ghazipur, and Sonbhadra. Amongst these Allahabad has five markets. Shahjahanpur, Siddharthnagar, and Ghazipur have four markets each; Bareilly , Unnao, and Barabanki have three markets each; Sonbhadra has two markets; and Uttarkashi has just one market. This is the last but one class in the context of number of districts while the third in case of number of RAMs. There are 31 RAMs under this class. The percentage of these RAMs is 11.83.

IV. Large Trade Area

This class has the expanse of 750 villages to 1000 villages under the trade area of a RAM. However, there are only 8 markets located in three districts — Faizabad, Gorakhpur, and Mirzapur. While Faizabad, and Gorakhpur have three markets each, Mirzapur has two markets. The percentage of these markets in the state is just 3.05. This class stands last in all the cases of number of districts, number of markets and their percentages. Thus, the number of districts having large trade areas of RAMs is too small. This is the reason for large trade area condition too.

V. Very Large Trade Area

This is the last class of the series. It has a trade area which has more than 1000 villages (per market). There are 12 districts in which 18 RAMs are located each of which having very large trade area. These 12 districts are Sultanpur, Deoria, Jaunpur, Varanasi, Tehri Garhwal, Chamoli, Pauri Garhwal, Pithoragarh, Almora, Basti, Azamgarh, and Pratapgarh. The first six districts have a number of villages in each of their trade areas is more than 1000 but less than 2000, while the other six districts have their trade areas including a number of villages more than 2000. Basti district has just as high as 4504 villages under its RAM. Jaunpur, and Varanasi have three markets each, Sultanpur, and Deoria have 2 markets each and the rest 8 districts have just one market each. That is why the trade areas are of the large expanse — rather very large expanse.

8.4.2 THEORETICAL — STATISTICAL

As per the statistical approach, the average trade areas of various districts have gone through a statistical measure — standard deviation (SD). Thus, under this, after calculating the mean   for all the arrays of data — showing area, population, and number of villages — separately, the standard

deviations have also been found out for all the three arrays respectively. In terms of $\overline{X} + 1\sigma$, $\overline{X} + 2\sigma$, ... $\overline{X} - 3\sigma$, classes have been made in all the three cases. However, there are no $\overline{X} - 3\sigma$ class in any of the three contexts while $\overline{X} - 2\sigma$ class does not exist in the population context. Thus, a comparative picture of various trade areas of each of the three contexts has been presented, and the details of these are shown in Table 8.5 as well as in Figures 27 - 29.

Table 8.5 : U.P. : Theoretical Trade Areas of RAMs — Statistical

Class	Areal Context			Population Context			Village Context		
	ND	NR	RAMs %	ND	NR	RAMs %	ND	NR	RAMs %
$\overline{X} + 1\sigma$	4	9	3.43	10	28	10.68	4	10	3.82
$\overline{X} + 2\sigma$	2	4	1.53	2	5	1.91	3	8	3.05
$\overline{X} + 3\sigma$	9	9	3.43	5	6	2.29	8	9	3.44
$\overline{X} - 1\sigma$	38	171	65.28	46	223	85.12	16	54	20.61
$\overline{X} - 2\sigma$	10	69	26.33	-	-	-	32	181	69.08
$\overline{X} - 3\sigma$	-	-	-	-	-	-	-	-	-
Total	63	262	-	63	262	-	63	262	-

ND = Number of Districts; NR = Number of RAMs

I. Trade Area in Areal Context

There are five classes under this context. However, $\overline{X} - 3\sigma$ class does not exist as all the districts have got their inclusion within five classes only, although, amongst these, two classes are also rather too small. The value of $\overline{X}$ = 1623.00 while the value of σ = 956.97. There are in all 15 districts in the positive side while the rest 48 in the negative side of the $\overline{X}$ in the entire U.P. Figure 27 shows the results of the observations.

I. $\overline{X} + 1\sigma$:

There are only four districts which have 9 RAMs having their trade areas as big as $\overline{X} + 1\sigma$ in areal terms. These four districts are Sultanpur, Mirzapur,

Varanasi, and Lalitpur. All these four districts have fallen in the 2000 — 3000 km^2 trade area range. All of these districts have two RAMs each (excepting Varanasi) and therefore, have comparatively bigger trade areas. The percentage of RAMs falling under this trade area class is 3.43 only.

II. $\overline{X}$+2 σ

This class is still smaller as there are only two districts under this. These two districts are Deoria, and Sonbhadra. There are also only two RAMs each in these districts and therefore, the trade areas are bigger in size. The percentage of RAMs falling under this trade area class is 1.53 only.

III. $\overline{X}$ + 3σ

This class has 9 districts. These districts are Uttarkashi, Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, Almora, Basti, Azamgarh, and Pratapgarh. All of these districts have just one RAM each. Besides, the first six districts also fall in the U.P. hill region which have large areas. That is why the trade areas of RAMs in these districts have fallen under $\overline{X}$ + 3 σ. Further, the other three districts are located in the eastern U.P. All of these districts have just one RAM each consequently the entire district areas have come under the trade areas of their respective single RAMs. The percentage of RAMs belonging to this trade area class is just similar to the $\overline{X}$ + 1σ class i.e. 3.43 only. The total number of RAMs is 9 in this class.

IV. $\overline{X}$ - 1σ

This is the biggest of all the five classes in the series. This class includes more than half of the number of districts of the state. There are 38 districts with 171 RAMs in this class. These districts are Dehradun, Nainital, Hardwar, Moradabad, Rampur, Bareilly, Pilibhit, Shahjahanpur, Aligarh, Mathura, Etah, Mainpuri, Etawah, Farrukhabad, Kanpur Dehat, Kanpur Nagar, Kheri, Hardoi,

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
TRADE AREA : AREAL CONTEXT

Fig. 27
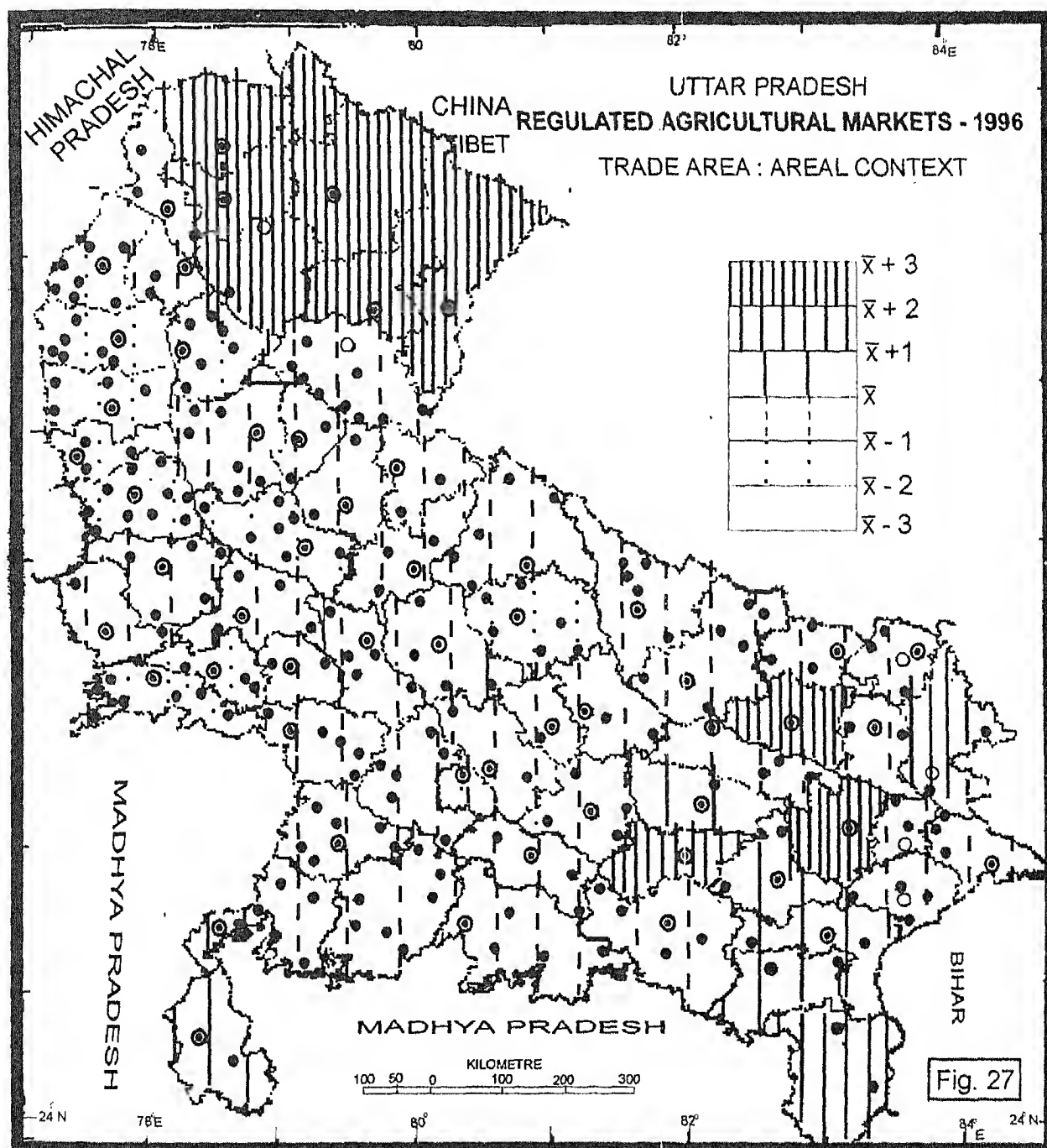
Unnao, Lucknow, Raebareli, Bahraich, Barabanki, Gonda, Faizabad, Siddharthnagar, Gorakhpur, Maharajganj, Mau, Ballia, Fatehpur, Jaunpur, Allahabad, Ghazipur, Jhansi, Jalaun, Hamirpur, and Banda. This class has two districts of U.P. hill region, ten districts of western U.P., nine districts of central U.P., thirteen districts of eastern U.P., and four districts of the Bundelkhand region.

Thus, this is the largest class showing that in terms of areal expanse, the trade area of a large part, even more than half of U.P. has on an average smaller the average trade areas in the state. All of these have smaller trade areas than the X by 1σ. The percentage of the RAMs with such trade areas is 65.28.

V. X - 2σ :

This is the second class in the negative side of the mean. There are ten districts with 69 RAMs having their trade areas smaller than the X trade area size by 2σ. The names of these districts are Saharanpur, Muzaffarnagar, Meerut, Ghaziabad, Bullandshahr, Bijnor, Budaun, Agra, Firozabad, and Sitapur. Out of these, the last one is located in the central U.P. region while all the rest i.e 9 districts are located in the western U.P. plain. The trade areas of the RAMs located in these districts, thus are smaller than the X for the state and the extent of this smallness is less by 2σ. There are 26.33 per cent RAMs which have such trade areas.

II. Trade Area In Population Context

There are only four classes in this context which have come after the application of the statistical measure mentioned above. The classes, X -2σ, and X - 3σ do not exist in this context (Figure 28). The values of X and σ are 710.719, and 624.780 respectively. The results of the computation and the observations are as follows :

I. $\overline{X} + 1\sigma$

There are ten districts which fall under this class. These districts are Almora, Bareilly, Unnao, Barabanki, Faizabad, Sultanpur, Gorakhpur, Jaunpur, Allahabad, and Mirzapur. Almora is located in the hill region while Bareilly in the western U.P. plain region. Unnao district is located in the central U.P. plain region while all the rest seven districts are located in the eastern U.P. plain. Almora has one RAM while Sultanpur, and Mirzapur have two RAMs each. Allahabad has five RAMs while the other six districts have three RAMs each. Thus, there are in all 32 RAMs which are located in these districts. All these markets have on an average bigger trade areas than the $\overline{X}$ for the state by 1 σ. This is second biggest class following the $\overline{X} - 1\sigma$ class in the present context. The percentage of the RAMs falling under this area class is 10.68.

II. $\overline{X} + 2\sigma$

However, only two districts, Lucknow with two RAMs and Varanasi with 3 RAMs, fall under this class. The total number of RAMs is thus only 5. The trade areas of this class are larger because of less number of markets in the districts. This is the smallest class of the context in question in terms of number of districts as also in terms of number of RAMs too. The RAMs with such size-trade-areas have a percentage of 1.91 only.

iii. $\overline{X} + 3\sigma$

This is also a small class, rather the second smallest following the $\overline{X} - 2\sigma$ class. There are five districts under this class which are named as Kanpur Nagar, Basti, Deoria, Azamgarh, and Pratapgarh. All of these districts excepting Deoria have just one RAM each. There are, thus, only six markets in the class that is why the trade areas are biggest in this context. Excepting Deoria, all the districts have their respective total population under just one respective market each. This is the second smallest class with regard to the

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996

TRADE AREA : POPULATION CONTEXT

Fig. 28
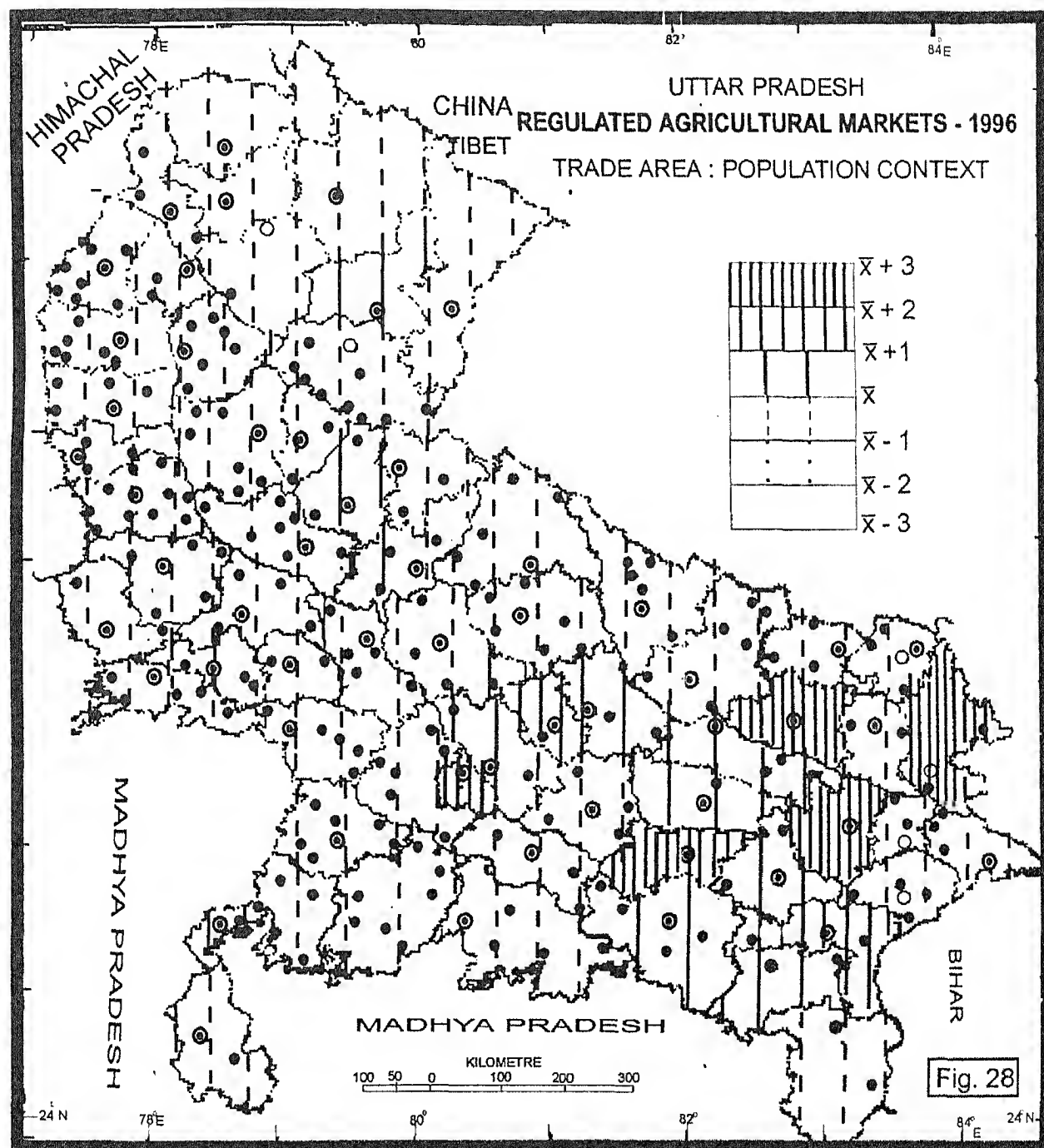
number of districts as also in terms of the number of RAMs too. The RAMs which have such trade areas have a percentage of 2.29 only.

IV. $\overline{X}$ - 1 σ

This is the biggest class of the context in reference and the difference between this and the following class which is the $\overline{X}$ + 1σ class is rather too much dominant as against ten districts and 28 RAMs of the $\overline{X}$ + 1σ class, there are 46 districts and 223 RAMs in this class. Thus, out of 63 districts, 46 districts; and out of 262 RAMs, 223 RAMs fall under this class. This is, rather, a too large the class covering more than 2/3rd of the total districts as also the markets too of the state.

The districts which fall under this class are : All the districts of the hill region excepting Almora; 18 districts of western U.P. plain region named Saharanpur, Hardwar, Muzaffarnagar, Meerut, Ghaziabad, Bullandshahr, Bijnor, Moradabad, Rampur, Budaun, Pilibhit, Shahjahanpur, Aligarh, Mathura, Agra, Etah, Firozabad, and Mainpuri ; seven districts of central U.P. region namely Etawah, Farrukhabad, Kanpur Dehat, Kheri, Hardoi, Sitapur, and Raebareli; nine districts of eastern U.P. plain region named Bahraich, Gonda, Siddharthnagar, Maharajganj, Mau, Ballia, Fatehpur, Ghazipur, and Sonbhadra; and all the five districts of the Bundellkhand region. This clearly shows that the most of the districts have the smaller trade areas in terms of population, although, the smallness is not too big as the deviation from the mean is only by 1 σ. As high as 85.12 per cent of the RAMs of the state have been observed to be under this trade area class.

III. Trade Area in Village Context

The trade area in terms of number of villages refers to the number of villages served by the RAM in question. The average for all the districts have been found out separately and then these have been measured in terms of

standard deviation against the mean for the state. The value of the mean and standard deviation are 713.006 and 355.360 respectively. Under this context, however, only one class i.e $\overline{X} - 3\sigma$ is non-existent. Thus, there are five classes included in the present analysis Figure 29 shows the further details of this class.

I. $\overline{X} + 1\sigma$

This class has four districts namely, Faizabad, Gorakhpur, Mau, and Mirzapur. All of these are located in eastern U.P. region. While the first two districts have three RAMs each, the next two have two RAMs each. Thus, there are ten RAMs in this class. This is the second smallest class with regard to the number of districts following the $X + 2\sigma$ class. As regards the number of RAMs, this is the third smallest class following the same $X + 2\sigma$ and $X + 3\sigma$. There are 3.82 per cent RAMs falling under this trade area class.

II. $\overline{X} + 2\sigma$

This is the smallest class both in terms of the number of districts as also the number of RAMs. There are only three districts named Sultanpur, Jaunpur, and Varanasi in this class. All of these are located in the eastern U.P. region. The total number of RAMs in this class is 8. Only Sultanpur has two RAMs while both the Jaunpur and Varanasi districts have three RAMs each. The RAMs with the present size trade area have a percentage of 3.05 only.

III. $\overline{X} + 3\sigma$

Out of the five classes in this context, this class falls in the middle i.e this is the third smallest/largest class with reference to the number of districts but as regards the number of RAMs it is the second smallest one. There are 9 districts in this class. These districts are Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, Almora, Basti, Deoria, and Pratapgarh. The first

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
TRADE AREA : VILLAGE CONTEXT

Fig. 29
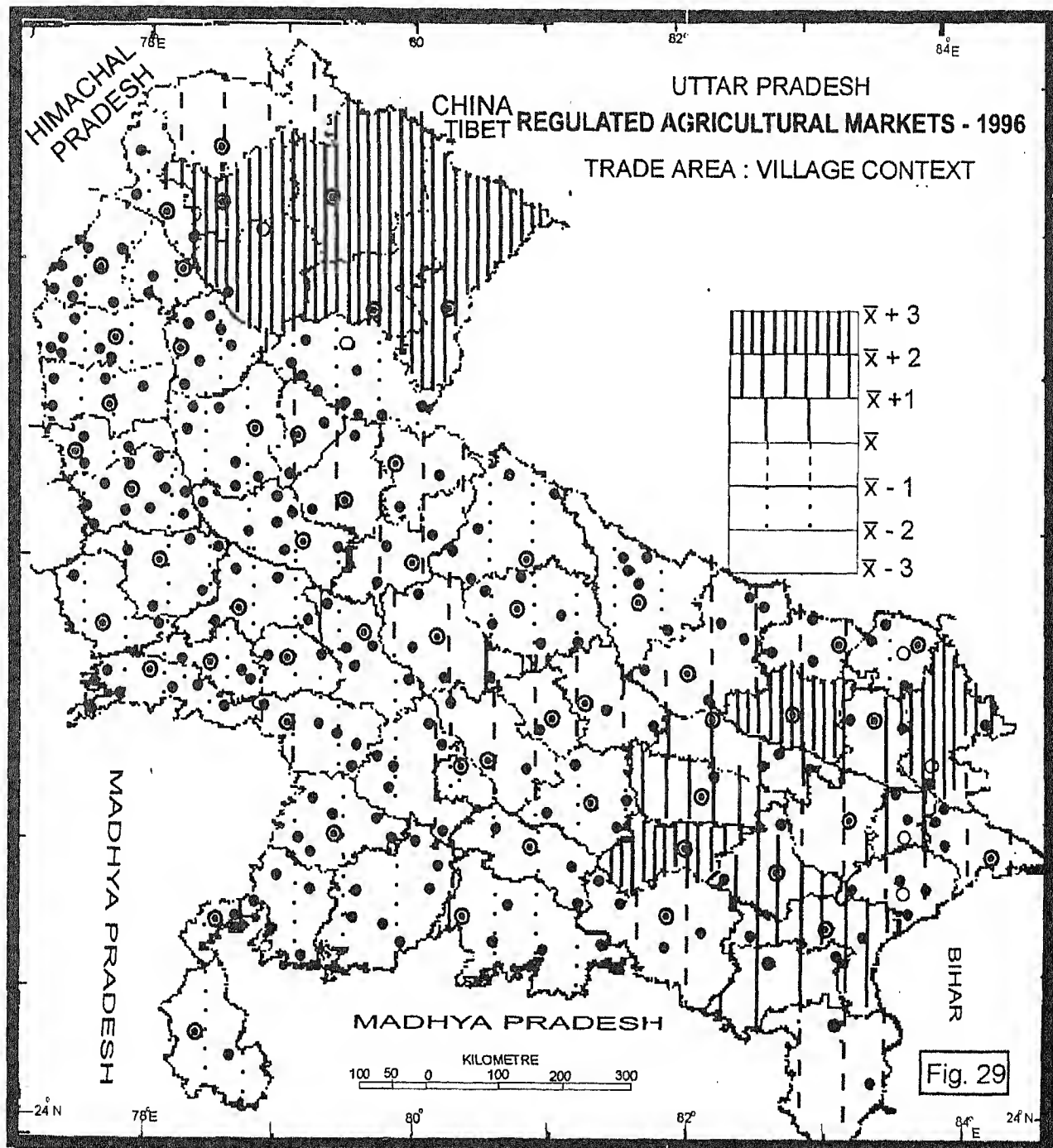
five districts are located in the hill region while the last one belongs to the eastern U.P. region. The other three districts are located in the eastern U.P. region. All the five hill districts in addition to Pratapgarh have just one RAM each. While Deoria has two RAMs. This is the class which shows that a RAM has the biggest trade area of the series. Thus, all these markets have the biggest trade areas in the context. The reason behind this is that most of the districts have just one market each and hence the entire number of villages have come under just one market in these cases respectively showing the very large areas. There are 8 districts and 9 RAMs under this trade area class. Percentage of the RAMs with such trade area class is 3.44 only.

IV. $X - 1\sigma$

This is the second largest class with regard to the number of districts as also the number of RAMs too. There are 16 districts which have 54 RAMs. Uttarkashi is the only hill district included in this class. Rampur, Bareilly, Pilibhit, and Shahjahanpur are from the western U.P. region. Hardoi, Unnao, and Lucknow districts are from the central U.P. region while, Barabanki, Gonda, Siddharthnagar, Azamgarh, Ballia, Allahabad, Ghazipur, and Sonbhadra are from the eastern U.P. region. Thus, one district from the hills, four districts from western U.P., three districts from central U.P. and, 8 districts from eastern U.P. i.e. a total of 16 districts are included in this class. Out of the 54 RAMs in all, one is located in the hill region, 13 in western U.P., 10 in central U.P. and 30 RAMs are located in the eastern U.P. region. There are 20.61 per cent RAMs which are included in this class.

V. $X - 2\sigma$

This, however, is the biggest class of the context, in reference to both the terms of number of districts, as also the number of RAMs too. There are 32 districts with 181 RAMs with 69.08 per cent in this class. This also shows that about half of the districts of the state, and more than 2/3rd of the RAMs are

under this class. It is also obvious that the trade area in terms of number of villages is the smallest in case of 32 districts with 181 RAMs in the state. This smallness is not too sharp as it is $\overline{X} - 2\sigma$ only and not the $\overline{X} - 3\sigma$.

The districts with their RAM numbers in brackets are as follows : Two districts of the hill region Dehradun (4) and Nainital (9); 15 districts of the western U.P. region — Saharanpur (8), Hardwar (5), Meerut (5), Ghaziabad (4), Muzaffarnagar (4), Bullandshahr (11), Bijnor (7), Moradabad (7), Budaun (8), Aligarh (6), Mathura (3), Agra (8), Etah (5), Firozabad (4), and Mainpuri (3); 7 districts of the central U.P. region — Etawah (6), Farrukhabad (6), Kanpur Dehat (6), Kanpur Nagar (1), Kheri (6), Sitapur (7) Raebareli (5) ; three districts of eastern U.P. region : Bahraich (6), Maharajganj (4) Fatehpur (5); and the five Bundellkhand districts — Lalitpur (2), Jhansi (6), Jalaun (7), Hamirpur(7), and Banda (5). As high as 69.08 per cent RAMs have this size class trade area.

8.4.3 TRADE AREA OF RAMs — HIERARCHICAL

There are 30 first order, 96 second order, and 136 third order RAMs in the state. Here, an attempt has been made to bring out the theoretical trade area on the basis of hierarchical orders.

I. Trade Area of First Order RAMs

In the state, the calculation of the trade area of the first order RAMs cannot be done at the district level as there are many districts which do not have any first order RAM. There are 30 first order RAMs against 63 districts of the state. This analysis has, therefore, taken into account the administrative divisions rather than the districts. There are 14 divisions in the state so it has been thought proper to work out trade area of first order RAMs at the division level. Although, there are 8 such divisions which have just one first order RAM each. Yet the study has been done in all the three context the area, the

population, and the number of inhabited villages. All the necessary and the relevant statistical facts are given in Table 8.6 in this connection.

Table 8.6 :U.P. : Trade Area on Hierarchical Basis — First Order RAMs

Division	Number of RAMs	Area (km^2)	Population	Number of Villages	Trade Area per market in terms of		
					Area (Km^2)	Population	No. of Villages
1. Garhwal	1	30,089	29,82,947	8,157	30,089	29,82,947	8,157
2. Kumaon	6	21,035	29,43,199	6,409	3,505.83	4,90,533.16	1,068.10
3. Meerut	4	29,910	1,52,77,764	5,611	7,477.50	38,19,441.00	1,402.75
4. Moradabad	1	12,895	80,80,697	5,705	12,895	80,80,697	5,705
5. Bareilly	3	17,362	85,53,452	6,971	5,787.33	28,51,150.66	2,323.66
6. Agra	4	22,424	1,30,72,987	6,609	5,606.00	32,68,246.75	1,652.25
7. Kanpur	1	14,776	91,21,725	4,901	14,776	91,21,725	4,901
8. Lucknow	3	31,104	1,53,09,333	10,163	10,368.00	51,03,111.00	3,387.66
9. Faizabad	1	27,578	1,42,97,415	11,900	27,578	1,42,97,415	11,900
10.Gorakhpur	1	18,945	1,36,28,811	14,578	18,945	1,36,28,811	14,578
11. Azamgarh	1	12,996	1,00,76,576	10,254	12,996	1,00,76,576	10,254
12.Allahabad	1	15,130	90,31,254	7,072	15,130	90,31,254	7,072
13.Varanasi	1	19,779	1,00,09,379	9,353	19,779	1,00,09,379	9,353
14.Jhansi	2	29,418	67,29,748	4,521	14,709.00	33,64,474.00	2260.50
Uttar Pradesh	**30**	**2,94,411**	**13,91,12,287**	**1,12,804**	**9,813.70**	**46,37076.23**	**3760.13**

The Table clearly shows that as many as 8 divisions, out of 14, have only one first order RAM each and hence the entire area of the division/ entire population of the division /entire number of the inhabited villages of the division come under the trade area of only one RAM in reference. There are only 6 divisions which have more than one first order RAMs each. Out of these also, Jhansi division has only two first order RAMs. The Lucknow, and the Bareilly divisions have three such RAMs each. The Meerut, and the Agra

divisions have four such RAMs each while the Kumaon division has 6 such RAMs. Accordingly, the theoretical trade areas have been found through simple calculations.

I. Trade Area in Areal Context

Leaving apart the single RAM divisions, out of the remaining 6 divisions, two divisions — Jhansi, and Lucknow — have their trade areas as the largest ones both of these are more than 10,000 km^2 each separately. Since the Lucknow division has three such markets and Jhansi division has only two, hence, under the normal conditions, the Jhansi trade area has to be bigger . This is true to the statistics also. The Jhansi division has Lalitpur, and Jhansi as first order RAMs. They have the average areal expanse of 14,709 km^2 each. Second to it is Lucknow division. This division has three RAMs of first order — Lucknow, Sitapur, and Lakhimpur. The average trade area is 10,368 km^2. The third in order is the Meerut division which has four such RAMs. The average areal expanse of the first order RAMs in this case comes to 7477.50 km^2. The first order RAMs of the Agra, and the Bareilly divisions almost have the equal trade areas — 5606 km^2 in case of Agra, while 5787.33 km^2 in case of Bareilly. The Kumaon division has the smallest first order trade area because the number of first order RAMs is the highest, 6, in this division. There are no divisions in the state which have even 5 RAMs each. Also, there are only two divisions out of 14 which have four first order RAMs each. Thus, the average areal covereage of first order RAM of the Kumaon division is the smallest, only 3505.83 km^2.

II. Trade area in the Population Context

In terms of population too, the trade areas of the first order RAMs in the state have been worked out. Again, leaving apart the 8 divisions which have just one first order RAM each, amongst the remaining 6 divisions, the Lucknow division stands first as it has the largest average number of persons served by

a first order RAM. The figure stands at even more than 51,00,000. This is followed by the Meerut division with 38,00,000 odd people, further, followed by Jhansi division with 33,00,000 odd people which is closely followed by Agra with 32,00,000 odd persons. The Bareilly division is also not much far behind as its population stands at 28,00,000 odd persons per RAM. Again the Kumaon division has the smallest trade area in this reference too, as the average figure comes to be only 4,90,533.16 persons.

III. Trade Area in Village Context

In this reference too, the trade areas of the first order RAMs have been calculated. Further, again, leaving apart the 8 divisions as mentioned above, amongst the remaining 6 divisions, again the Lucknow division stands first with reference to the number of villages served by the first order RAM. In this division, the average number of inhabited villages served by such a market stands to be 3387.66 which is the highest in the present context. It is followed by the Bareilly division with 2323.66. The third in order is the Jhansi division with 2260.50 villages each first order RAM. The Agra division stands fourth with 1652.25 villages. It is followed by the Meerut division with 1402.75 villages each first order RAM. Again the smallest trade area in reference too is that of the Kumaon division first order RAM trade area which is just 1068.10 villages each RAM.

It is obvious from the above that in two cases, Lucknow division first order RAMs have the largest trade areas while in one case the Jhansi division has the largest one. However, in all the three cases, the Kumaon division stands at the end meaning thereby that in all these references, this division's first order RAMs have the smallest average trade areas. At the state level, however, these three average trade areas are 9813.70 km ^{2}, 46,37,076.23 persons, and 3760.13 inhabited villages per first order RAM.

9. SPATIAL DESIGNS

9.1 INTRODUCTION

The spatial distribution of points/nodes in any area represents some system(s). If the points are serially joined in different areas, the resultant forms of the constallations of the points emerge into some patterns. By and large, these systems/forms are near to some geometrical patterns. These geometrical patterns of nodes over an area are known as 'spatial designs'. Thus, the market points or nodes also have some systems. It must be noted that some systems have been recognized by some scholars in respect of locations of villages while others have traced such systems in respect of the locations of markets. However, there is a characteristic absence of such a study of the regulated agricultural markets — RAMs. Since the RAMs have been established and developed by the Government, these are known as 'contrived' or 'planned' markets, while the periodic markets evolve and develop with the passage of time, more or less in a natural process. Hence, particularly the periodic markets have various systems like dendritic, intermeshed etc. It must be noted here that when periodic markets are joined or linked in opening-day-sequence i.e. in temporal order, such a special system is known as a market cycle/circuit rather than the system which has not necessarily a temporal sequence. Thus, a market cycle may be a spatial design but the latter itself may not always be the former.

9.2 OBJECTIVE

The objective of present treatise is to reveal the spatial systems in the state of U.P. with the respect to the regulated agricultural markets — RAMs — as this aspect has not been presented by any scholar as yet.. The discussion is based on the first and second order RAMs in various districts as all the 262 RAMs at the same time could not be taken up for discussion for various

constraints. There are 30 first order RAMs and 96 second order RAMs in the state. The designs have been presented in these contexts only. Thus, the present piece of research presents an answer to the question : Are they any spatial designs hidden behind the distribution of the first order and second orders RAMs ?

9.3 AVAILABLE STUDIES

Hodder (1959), and Skinner (1964-65) have developed hexagonal patterns of nodes in their studies. Johnson(1970), pp. 72-116) has discussed the market systems and spatial designs at length in his study centred on the organisation of space in developing countries. He has analysed three types of rural landscape designs — dendritic system, intermeshed systems, and the contrived system. Dixit in his two studies (1984, pp. 151-155; 1988, pp. 231—237) has made exercises of exploring the hidden spatial designs of periodic markets in a part of Kanpur umland, and in the district of Hamirpur. While in first study he identified 22 cases together of triangular, linear, rectangular, and intermeshed patterns, in the second case he found the radial, linear, angular, rectangular, and dendritic patterns.

9.4 METHODOLOGY

The present study is centred on regulated agricultural markets, hence by and large the market systems are contrived. Yet, the observations show that out of the general distribution locations of these nodes various geometrical designs also emerge. In this reference, the present analysis is different from Johnson's analysis of spatial designs and systems. The contrived system is related to regulated markets only hence, for locating the spatial designs, only the first order RAMs, and the second order RAMs have been taken up for analysis. Within this system the author had made several exercises by serially joining the nodes to demonstrate the various geometrical forms of the first order and the second order RAMs. In U.P., there are ten single RAM districts namely,

Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, Aligarh, Kanpur Dehat, Basti, Azamgarh and Pratapgarh. Further, there are 7 two RAMs districts — Lucknow, Sultanpur, Deoria, Mau, Mirzapur, Sonbhadra, and Lalitpur. Thus, there are 17 districts which do not provide any geometrical bodies. Also, all the 262 RAMs cannot be taken up at the same time for certain reasons, hence the first order RAMs at the regional level, and the second order RAMs at the district level have been taken for exposing their geometrical shapes/figures.

9.5 SPATIAL DESIGNS

These exercises have shown that there do exist some geometrical bodies made by the first order RAMs in the hill region, in the western U.P., region in the central U.P. region, and in eastern U.P. region. The Bundelkhand region, of course, has no such designs.

The hill region has one triangular and one rectangular designs, one side of which is common to both the figures. The western U.P. has one long linear design and other triangular one. The central U.P. also has a triangular design of the RAMs in reference while the eastern U.P. has a five sided body demonstrating the pattern of the first order RAMs of this region.

In case of the second order market designs, western U.P. have five systems out of which, three have rectangular patterns while three systems have triangular patterns (one system consists of two small triangles — the apex of which is common to both). The central U.P. region has one triangular, one rectangular and three linear (of which one looks angular too) patterns of markets.

The Bundelkhand region has three such systems out of which two are rectangular and one is a triangular system. The eastern U.P. however has no such pattern of the second order RAMs.

Table 9.1 provides the various details of all the design of the state.

9.5.1 DESIGNS EMERGING FROM FIRST ORDER RAMs

This study brings out some very interesting results on the map of U.P. All the locations of the first order RAMs have been marked boldly on the map showing the various spatial designs of the state (Figure 30 (I) & (ii) and Table 9.1). There are various areas — sub-regions — of these markets. These areas and their respective RAMs are as follows :

Table 9.1   : U.P. : Spatial Designs —First Order RAMs

Designs	Region	No. of Cases	No. of RAMs	Markets Involved
Triangular	(i) Hills	1	3	Haldwani, Kashipur, Rudrapur
	(ii) Western U.P.	1	4	Moradabad, Bareli, Shahjahanpur, Pilibhit
	(iii) Central U.P.	1	3	Kanpur, Lucknow, Sitapur
2. Rectangular	(I) Hills	1	4	Haldwani, Rudrapur, Kichchha, Khatima Sitarganj in between).
3. Linear	(i) Hills	1	5	Kashipur, Rudrapur, Kichha, Sitarganj, Khatima
	(ii) Western U.P.	1	(1) + 8	(Dehradun),Saharanpur, Muzaffarnagar, Meerut, Hapur, Aligarh, Hathras, Mathura, Mainpuri.
4. Five-sided	(i) Eastern U.P.	1	5	Bahraich, Gorakhpur, Ballia, Varanasi, Allahabad

I. The Areas

I. Hills

The first order RAMs of the hill region excepting Dehradun (as it lies far away from all the other RAMs of this region) have as many as six nodes for locating/exposing/developing the geometrical figures. All these are located in the Nainital district.

II. Western U.P.

This region has been divided into two sub-regions — the western U.P. (i) includes all the 8 RAMs of the first order right from the north-western end of the state i.e. Saharanpur upto Mainpuri in the southern end of this sub-region; the western U.P. However, Dehradun, the first order market of the hill region may also be included in this system as in case of hills, particularly with reference to the Nainital district's. First order markets, this first order RAM is, rather, assuming an isolated location. (ii) includes the remaining 4 first order RAMs lying to the east of it from Moradabad to Shahjahanpur and Pilibhit.

The western U.P. (I) is a part of the Ganga - Yamuna Doab, while the western U.P. (ii) is located between Ganga in the West, hills in north, Kheri district in the east, and Hardoi district in the south-east.

III. Central U.P.

This area includes the administrative divisions of Kanpur, and Lucknow. This region has 4 first order RAMs namely Kanpur, Lucknow, Sitapur, and Lakhimpur. Thus, the divisions of Kanpur, and Lucknow have another system. This system comprises Sitapur, and Lakhimpur in the north; and Kanpur, and Lucknow in the south and south-east respectively.

IV. Eastern U.P.

This region consists of the entire east U.P. area. It extends from Bahraich in north-west to Allahabad-Varanasi in the south, and east, Gorakhpur in the south-east, and Ballia in the east. It has 5 first order RAMs.

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
FIRST ORDER : SPATIAL DESIGNS :

Fig. 3d (i)
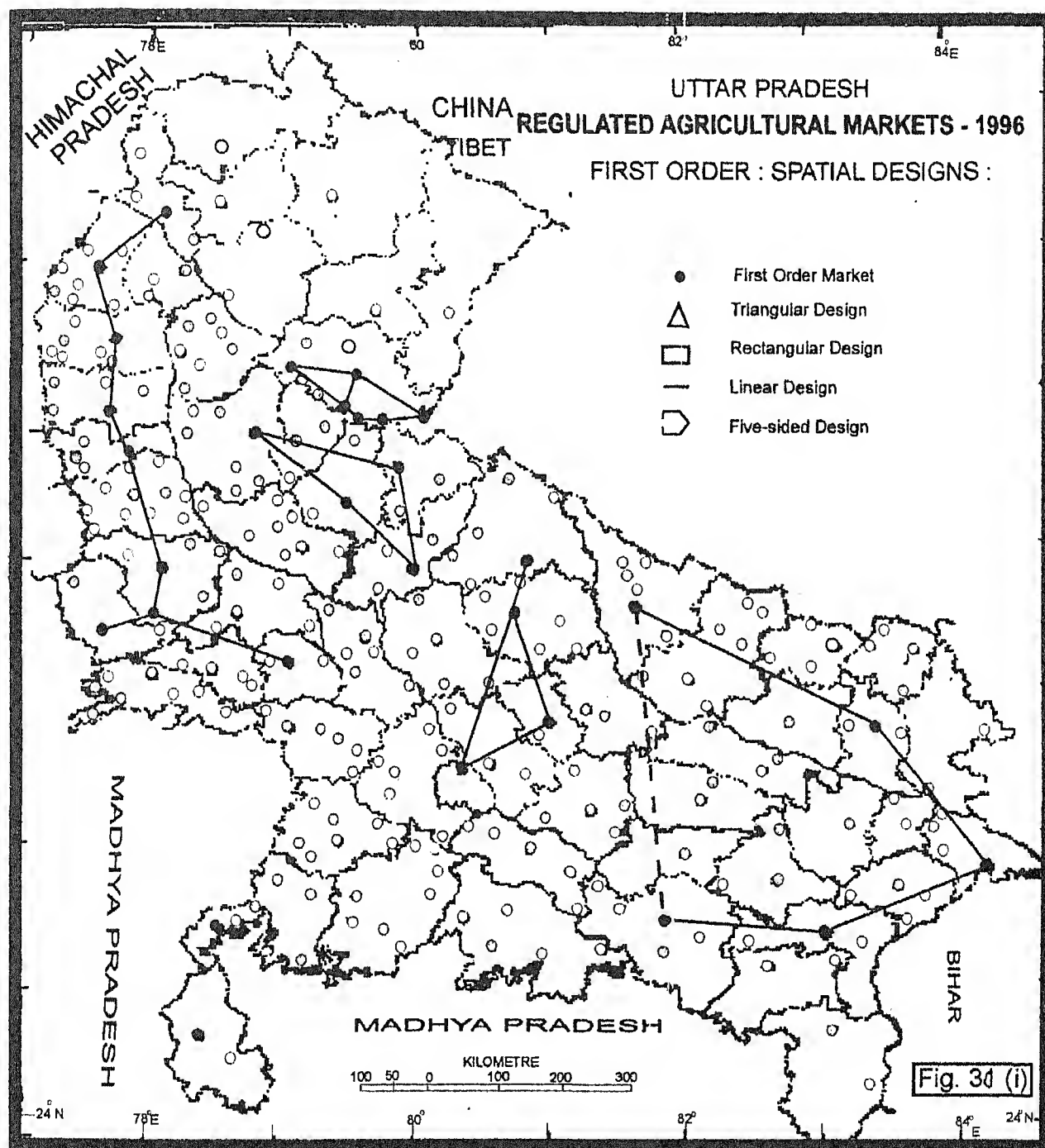
V. Bundellkand

Two first order RAMs are related to the Bundellkhand region which actually remains undefined due to its nature (as simply two points do not give rise to any geometrical figures excepting, of course, a line).

II. The Designs

I. Hill Region

As has already been pointed that the Dehradun first order RAM has been excluded from this (as it has been included in the west U.P. area) for the sake of convenience at the moment otherwise it may also be stated that in reference of hill region, this first order market lies in isolation.

All the other six first order RAMs are located in Nainital district. These are Haldwani, towards north, Kashipur towards west, Rudrapur and Kichha in the south, Sitarganj in the south-east, and Khatima in the extreme east. There emerges a network of first order RAMs, when joined serially from west to east including Kashipur, Rudrapur, Kichha, Sitarganj, and Khatima, it presents more or less a clear example of a linear pattern. This pattern extends for 120 km in east-west direction in general. However, the longest distance amongst these is the one between Kashipur, and Rudrapur., 50 km. The shortest distance is between Rudrapur, and Kichha, 3 km. In this respect, Haldwani in the north lies almost isolated yet if it is linked with Rudrapur RAM there emerge incomplete figures — an incomplete triangle towards west and an incomplete rectangle towards east. Therefore, if Kashipur is linked with Haldwani by a line as also Khatima with Haldwani by another line — two figures emerge, a triangle in the west and a rectangle in the east Figure 30 (ii) A. Thus, linear, triangular, and rectangular systems are formed by the first order RAMs of this area.

In this system, the biggest RAM is that of Haldwani which has a CI value of 92.50 while the smallest one is Kichha with a C I value of 75.37.

II. Western U.P. Region

West U.P. I

This region is located in the Ganga-Yamuna Doab. There are 8 RAMs in this area. If Dehradun, is also included in this, the number rises to 9. These nine RAMs roughly from north to south-east are Dehradun, Saharanpur, Muzaffarnagar, Meerut, Hapur, Aligarh, Hathras, Mathura, and Mainpuri. All of these have been serially linked from Dehradun to Mainpuri. This system presents a clear linear design with a small extention towards west from Hapur to Mathura. All these first order RAMs are the district headquarters also excepting Hapur (in Ghaziabad district), and Hathras (Aligarh district). This is the longest linear pattern extending for more than 500 kms. The line is passing through almost middle part of the Doab area of 9 districts. (Figure 30 (ii) B). In this system, Hapur is the biggest RAM with a C I value of 92.50 while the smallest RAM, Meerut has a C I value of 75.12.

Western U.P. II

This area presents a distinct example of triangular design. It comprises 4 first order RAMs i.e. Moradabad in the north-west, Bareilly towards south-east, and Shahjahanpur, further south-eastward while Pilibhit is located roughly towards east from Moradabad, and northwest from Shahjahanpur. While its Moradabad-Shahjahanpur base is 160 km, the other two sides from Pilibhit towards Moradabad, and Shahjahanpur respectively are 108 km and 80 km. This triangle passes through 5 districts namely Moradabad, Rampur, Bareilly , Pilibhit, and Shahjahanpur. (Figure 30 (ii) C). This system has the largest RAM in Bareilly which has a C I value of 97.50 while the smallest one, Shahjahanpur, has a CI value of 80. Bareilly is the biggest first order RAM with the highest C I value in entire state.

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
FIRST ORDER : SPATIAL DESIGNS

△	Triangular
⬜	Rectangular
—	Linear
⬠	Five-sided
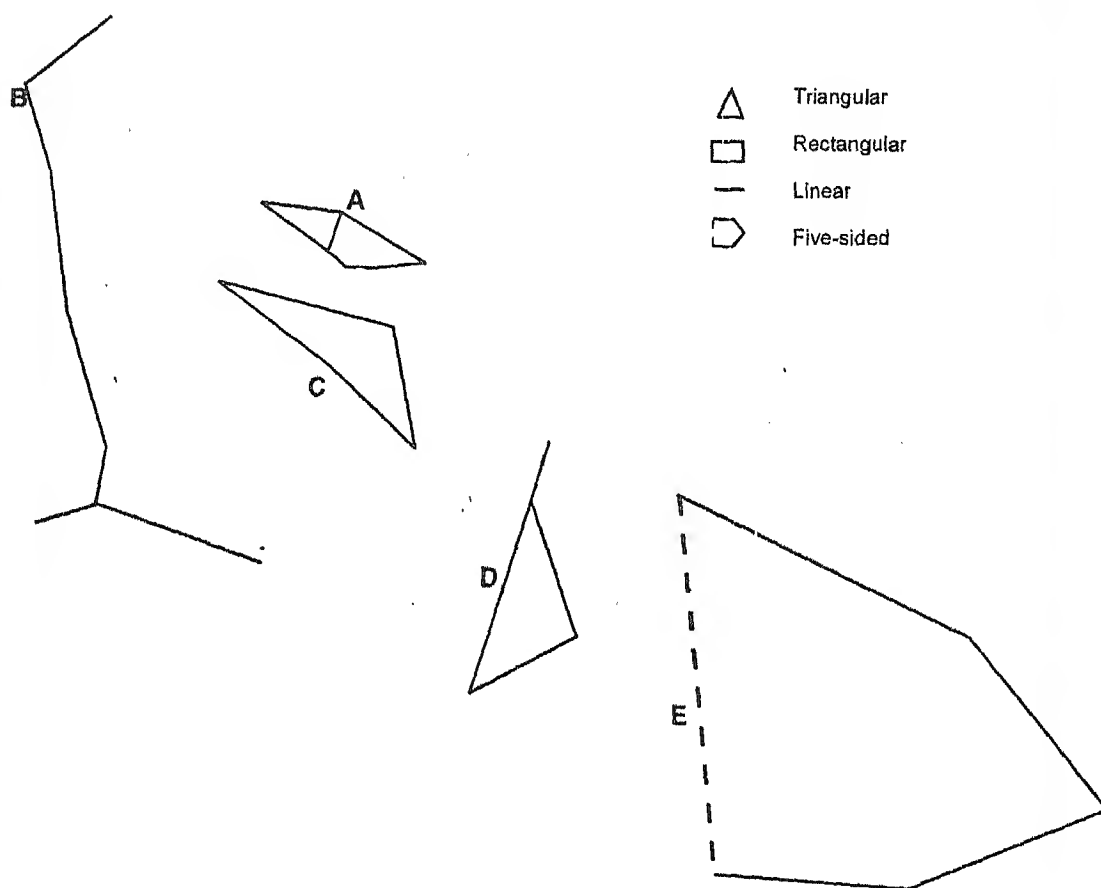
Fig. 30 (ii)

III. Central U.P. Region

This area also consists of 4 first order RAMs like the earlier west U.P. (ii) region. It presents although also a triangular figure like the earlier one but it makes a small triangle of 3 RAMs only while the fourth RAM lies in the extreme north. The actual triangle is made by the RAMs, Kanpur in the south, Lucknow in the north-east from Kanpur, and Sitapur roughly towards north both from Kanpur and Lucknow. The fourth RAM, Lahimpur, is on the extended Kanpur-Sitapur base beyond Sitapur towards north. Kanpur-Sitapur base is 125 km while the extended part of the base is about 50 km. The Lucknow-Sitapur side is 85 km while the Kanpur-Lucknow side is 77 km. This system with extended base passes through 6 districts namely, Kheri, Sitapur, Hardoi, Unnao, Kanpur, and Lucknow. (Fig. 30 (ii) D). The system has its biggest RAM in Lucknow with a C I value of 88.75 while its smallest RAM is Sitapur with 78.75 C I value.

IV. Eastern U.P. Region

This area comprises five first order RAMs i.e. Bahraich in north; from Bahraich is Gorakhpur towards south-east, and from Gorakhpur further south-eastward is Ballia. From Ballia towards south-west is Varanasi, and from Varanasi towards west is Allahabad. These five RAMs make four sides and an open geometrical shape. If Bahraich is linked with Allahabad, it gives the largest side of a five-sided figure. This is a very big figure lying in the eastern part of U.P. As the western U.P. (i) has a very prominent linear system, likewise this system is also very prominent which covers a large area of eastern U.P. The Bahraich-Gorakhpur side is 200 km, the Gorakhpur-Ballia side is 133 km, the Ballia-Varanasi side is 128 km, while the Varanasi-Allahabad side is 118 km. The longest side between Allahabad and Bahraich, purposely drawn to present the five sided figure, is 230 km. This body encompasses the districts of Bahraich, Gonda, Basti, Siddharthnagar, Gorakhpur, Deoria, Ballia, Ghazipur, Varanasi, Allahabad, Pratapgarh, Sultanpur, Faizabad, and

Barabanki along the five sides while Jaunpur, Azamgarh, and Mau are located in the midst. Thus, there are 17 districts involved in this design (Figure 30 (ii) E). The biggest first order RAMs of this design are Allahabad, Varanasi of the same C I value i.e. 91.25 while Ballia has the lowest C I value, 75.12. It is the lowest of the RAMs of the entire state in this order of RAMs.

V. Bundellkhand

The last set of first order RAMs consisting of two RAMs — Jhansi, and Lalitpur — belongs to the Bundelkhand region and that by joining these only a line comes into being which cannot be considered even as a linear design as there are only two points while the linear design should have at least three nodes, hence, two nodes do not make any geometrical figure even a linear design excepting a simple line.

Thus, in four regions, there are five prominent sets of spatial designs made by the first order RAMs, 30 in number, in the state.

9.5.2 DESIGNS EMERGING FROM SECOND ORDER RAMS

Since two nodes do not make any particular spatial design, the districts with two second order RAMs have been excluded from the present analysis while discussing the geometrical designs. Thus, the districts, with at least three second order RAMs have been included in the study. Such districts are 14 in number. These districts with their respective second order RAMs are : Nainital (3), Meerut (3), Bijnor (4), Moradabad (5), Budaun (4), Aligarh (4), Etawah (3), Farrukhabad (4), Kheri (3), Hardoi (4), Raebareili (3), Jhansi (4), Jalaun (4) and Hamirpur (3). Thus, there is just one district with 5 RAMs, There are seven districts with four RAMs each, and six districts with three RAMs each. In all there are 14 districts and 51 RAMs.

The districts (with number of RAMs) which have been excluded from the study are Dehradun (1), Saharanpur (1), Hardwar (2), Muzaffarnagar (2),

Ghaziabad (2), Bullandshahr (2) , Rampur (2), Bareilly (1), Pilibhit (2), Shahjahanpur (1), Mathura (1), Agra (2), Etawah (2), Kanpur Dehat (2), Barabanki (2), Gonda (1), Faizabad (2), Sultanpur (2), Basti (1). Maharajganj (2), Deoria (1), Jaunpur (2), Azamgarh (1), Fatehpur (1), Pratapgarh (1), Allahabad (1), Varanasi (2), Ghazipur (1), Sonbhadra (1), and Banda (1). The total number of these district is 36. In addition to these, the single market districts of the hill region namely, Uttarkashi, Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, and Almora — six in number have also been excluded. Thus, despite the existence of second order RAMs, a very high number of districts is not participating in the spatial designs.

Table 9.2   : U.P. : Spatial Designs — Second Order RAMs

Designs	Region	No. of Cases	No. of RAMs	Market-Districts Involved
(i) Triangular	(i) Hills	1	3	Nainital — Ramnagar, Bajpur, Gadarpur.
	(ii) Western U.P.	3	(i) 3	Meerut — Baraut, Khekra, Mawana
			(ii) & (iii) 5	Moradabad — Amroha, Hasanpur, Sambhal, Bahjoi, Chandausi
	(iii) Central U.P.	1	(i) 3	Hardoi — Hardoi, Sandila, Madhoganj
	(iv) Bundelkhand	1	3	Hamirpur — Rath, Maudaha, Hamirpur
2. Rectangular	(i) West U.P.	3	(i) 4	Bijnor — Najibabad, Kirathpur, Dhampur, Chandpur
			(ii) 4	Budaun — Sahaswan, Bilsi, Ujhani, Budaun
			(iii) 4	Aligarh — Khair, Atrauli, Chhara, Sikandararau
	(ii) Central U.P.	1	(i) 4	Farrukhabad — Kaimganj, Farrukhabad, Kannauj, Chhibramau.
	(iii) Bundelkhand	2	(i) 4	Jhansi — Chirgaon, Mauranipur, Gurusarai, Month
			(ii) 4	Jalaun — Orai, Jalaun, Konch, Ait
3. Linear	(i) Central U.P.	3	(i) 3	Etawah — Etawah, Bharthana, Auraiya
			(ii) 3	Kheri — Paliankalan, Golagokarannath, Mohammadi
			(iii) 3	Raebareli — Raebareli, Lalganj, Jais

As regards the geometrical designs made by the second order RAMs, it has been observed that the RAMs of different regions/sub-regions make several clear designs Figure 31 (I) & (ii). Amongst these, angular, triangular, rectangular designs are the significant ones. The second order RAM-designs have been, unlikely the first order RAM-designs, discussed at the district level. The various details have been demonstrated through the Table 9.2.

I. Hill Region

Amongst the hill districts, Nainital is the only district which has three second order RAMs : Ramnagar, Bajpur, and Gadarpur. By joining these three points, a clear triangle comes into being. If Ramnagar-Gadarpur line is treated as the base, the Ramnagar-Bajpur, and Bajpur-Gadarpur are the two sides. The C I values of all of these fall between 60.00 and 67.50. The Bajpur-Gadarpur distance is 19 km, Ramnagar-Bajpur distance is 26 km, while Ramnagar-Gadarpur distance is 40 km. This triangle lies in the western part of the district. (Figure 31 (ii) a)

II. Western U.P. Region

There are several figures which have been formed out of second order RAMs in this area. These are presented district-wise as follows :

I. Meerut District

Out of five markets, there are three markets of the second order in this district. These RAMs are Baraut, Khekra, and Mawana. The C I values of these are 70.00, 55.62, and 54.37 respectively. Thus, Baraut is the biggest one while Mawana is the smallest RAM. These three nodes make a triangle, although this triangle has a small base located in extreme western part of the district,

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
SECOND ORDER : SPATIAL DESIGNS

○   Second Order Market
△   Triangular Design
▭   Rectangular Design
—   Linear Design

Fig. 31 (i)
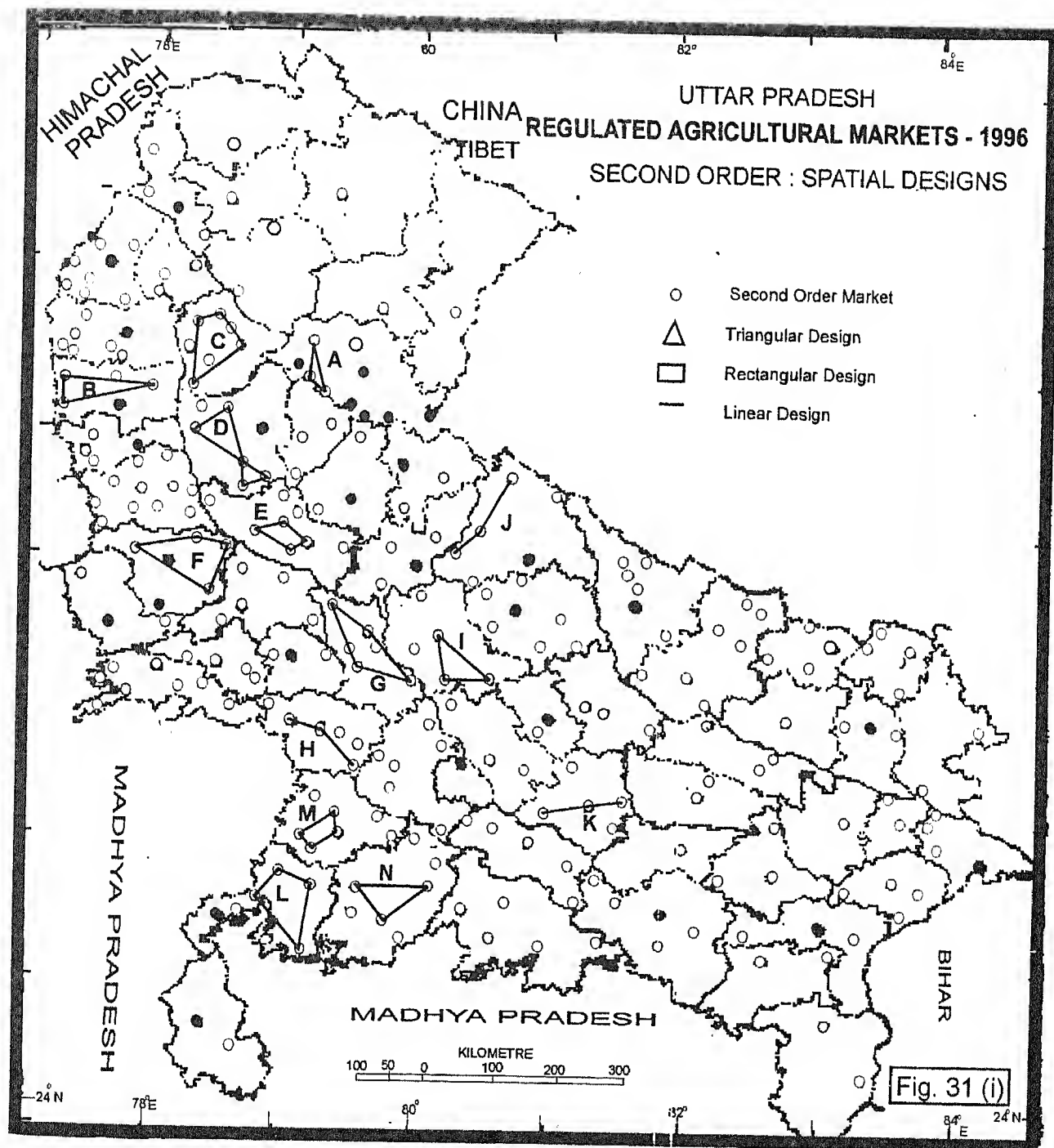
almost along the western boundary of the district. The Baraut-Khekra base is 30 km, while Baraut-Mawana side, and Khekra-Mawana side are 68 km, and 70 km respectively. The triangle occupies about $1/3^{rd}$ of the total area of the district. This design belongs to the Meerut division.(Figure 31 (ii) B).

II. Bijnor District

There are four second order RAMs in this district — Nazibabad, Kiratpur, Dhampur, and Chandpur. These four nodes present a four sided figure — a rectangular. The C I values vary from 61 to 67.50 in this case. Nazibabad-Kiratpur side is 20 km, Nazibabad-Dhampur side is 23 km., Kiratpur-Chandpur is 41 km., while Dhampur-Chandpur side is 45 km. The rectangle encompasses a major part of the district and is located almost in the central area of the district. This design comes under Moradabad division. (Figure 31 (ii) C).

III. Moradabad District

This district has the highest number of second order RAMs in the entire state. There are five such RAMs namely, Amroha, Hasanpur, Sambhal, Bahjoi, and Chandausi. Chandausi has the highest C I value of 71.87. Bahjoi has the lowest amongst these, 75.50 only. This district has two second order designs in triangular form — while Amroha, Hasanpur, and Sambhal, make one triangle; Sambhal, Bahjoi, and Chandausi make another one — rather smaller in size. The bigger triangle has Amroha-Hasanpur as the base while the smaller one has Bahjoi-Chandausi, the base. Both the triangles jointly cover roughly the central part of the district. Amroha-Hasanpur base is 26 km while Bahjoi-Chandausi is 17 km. Sambhal is about 45 km from Hasanpur while about 40 km from Amroha, on the other hand, it is about 20 km from Chandausi and 18 kms from Bahjoi. This is the second design of Moradabad division. (Figure 31 (ii) D).

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
SECOND ORDER : SPATIAL DESIGNS

O	Second Order Market
△	Triangular Design
▭	Rectangular Design
—	Linear Design
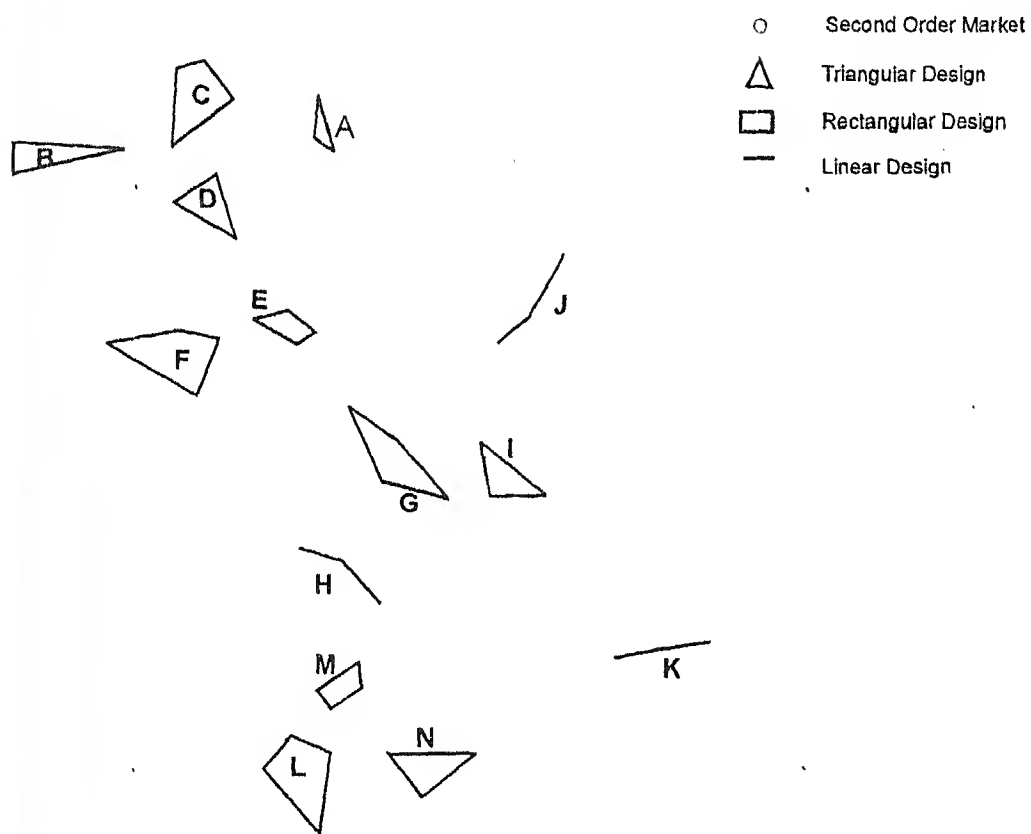
Fig. 31 (ii)

IV. Budaun District

Out of 8 markets in this district, there are four of the second order namely Sahaswan, Bilsi, Ujhani, and Budaun. The C I value of Budaun is the highest, 69.37, while Bilsi has only 55.00. These four nodes make a small rectangle in the central part of the district. Budaun-Bilsi side is 24 km, Bilsi-Sahaswan is 18 km. Sahaswan-Ujhani is 29 km while Ujhani-Budsun is 14 km. This design falls in the Bareilly division. (Figure 31 (ii) E).

V. Aligarh District

This district has six markets out of which two (Aligarh, and Hathras) are of the first order and the rest four are of the second order. The second order RAMs are : Khair, Atrauli, Chhara, and Sikandararau. The CI value of Atrauli is the minimum 56.87, while this value is the highest in case of Khair, 67.50, amongst all these four nodes. These nodes present a rectangular design. The rectangle is not small in size and covers roughly the northern half of the district. The Chhara-Atrauli is 23 kms, Atrauli-Khair side is 37 km, Khair-Sikandararau side is 62 km, and Sikandararau-Chhara is 32 km. The Aligarh first order RAM is located in the midst of this rectangle. This designs falls in the Agra division. (Figure 31 (ii) F).

III. Central U.P. Region

I. Farrukhabad District

Out of six RAMs, Farrukhabad district has four second order RAMs. The second order RAMs are Kaimganj, Farrukhabad, Chhibramau, and Kannauj. The C I values of all of these four centres are rather high. These are 66.87, 69.37, 66.25, and 69.37 respectively. Thus, Farrukhabad, and Kannauj have the same C I values. The Kaimganj-Farrukhabad side is 34 km, Farrukhabad-Kannauj side is 52 km, Kannauj-Chhibramau is 42 km while Chhibramau-Kaimganj is 50 km. The rectangle occupies a major portion — about 2/3rd —

of the district. The Kamalganj, a third order RAM falls within this rectangle, while, another third order RAM, Mohammadabad is located on Chhibramau-Kaimganj side. This design falls in the Kanpur division. (Figure 31 (ii) G).

II. Etawah District

This is the second design of the Kanpur division. It emerges from Etawah district. This district has 6 RAMs of which three are of second order while the other three are of the third order. Second order RAMs are Etawah, Bharthan, and Auraiya. The C I values of these are 64.37, 59.37 and 61.87 respectively. These three RAMs form almost a linear and/or an angular shape which cannot be converted into a triangle as the third side would be too long and the triangle would also be too long. The Etawah-Bharthana side is 32 km, and Bharthana-Auraiya side is 35 km. It passes through almost the central part of the district from west to east and further south-eastward. This is the second design (Figure 31 (ii)H) of the Kanpur division.

III. Hardoi District

This district has five RAMs out of which four are of second order. These RAMs are Sahabad, Hardoi, Madhoganj, and Sandila. The C I value of these RAMs are 67.50, 37.75, 56.87, and 62.50 respectively. The only left over (third order) RAM is Sandi which has 39.37 C I value. Out of the four second order RAMs, Sahabad is located far off in the north-west. Thus, the remaining three RAMs make a triangular shape. The Hardoi-Sandila base is 53 km, Hardoi-Madhoganj side is 30 km while, Madhoganj-Sandila side is also 34 km. This triangle occupies a small portion of the southern half of the district. This is one of the two designs of the Lucknow division. (Figure 31 (ii) I).

(iv) Kheri

This is the second design of the Lucknow division. Kheri district has six RAMs out of which Lakhimpur is the first order RAM, three are of the second order

and two are of the third order. The second order RAMs are Paliankalan, Golagokaranath, and Mohammadi. The C I values of these RAMs are 73.12, 67.50, and 55.00 respectively. Paliankalan is located in extreme north-west part of the district. The two other nodes are located almost along the western boundary of the district. The three RAMs just make a line, thus presenting a linear design. Paliankalan-Golagokarnnath distance is 45 km while Golagokarnnath-Mohammadi is 26 km. This pattern of markets is located in the western part and almost along the western boundary of the district. (Figure 31 (ii) J).

(v) Raebareli District

This district has the third design of the Lucknow division. This district has five markets out of which three are of second order, while two are of third order. The second order RAMs are Lalganj, Raebareli, and Jais. The C I values of these RAMs are 58.12, 72.50, and 56.25 respectively. These three markets make only a linear pattern in which Raebareli is located between Lalganj and Jais. It lies almost in the middle part of the district in roughly northeast-south west direction. The distance from Raebareli to Lalganj is 31 km, while that to Jayas is 29 km. (Fig. 31 (ii)K).

Thus, there are five designs in the central part of U.P. like western U.P.

IV. Bundellkhand Region

This region or the Jhansi division has three such designs which fall in the districts of Jhansi, Jalaun, and Hamirpur.

I. Jhansi District

Jhansi district has six RAMs out of which one is of first order and one Baruasagar is of third order. There are four second order RAMs. These second order RAMs are Chirgaon, Mauranipur, Gurusarai, and Moth. The C I

values of these RAMs are 58.75, 66.87, 60.00, and 66.25 respectively. Thus, Mauranipur is the biggest while Chirgaon is the smallest. These four nodes make a rectangle, the four sides of which are : Chirgaon-Mauranipur, 50 km; Mauranipur-Gurusarai, 46 km; Gurusarai-Moth, 26 km; and Moth-Chirgaon, 24 km. This is a quite big rectangle and occupies about $1/3^{rd}$ area of the district. It is located almost in the middle part of the broad portion of the district. (Figure 31 (ii) L).

II. Jalaun District

This districts has 7 RAMs out of which four are of second order while three are of third order. The second order RAMs are Konch, Ait, Orai, and Jalaun. The C I values of these RAMs are 71.87, 57.50, 75.00, and 61.25 respectively. Thus, Orai is the biggest centre while Ait is the smallest one. Also, the C I value of Orai is just on the higher margin of this order. Any addition to the C I value would have brought this RAM under the first order hierarchical class. The four RAMs give rise to a small rectangle located roughly in the middle part of the district (nearer to south-western boundary). The Konch-Ait side is 10 km., Ait-Orai side is 21 km, Orai-Jalaun side is 15 km, while Jalaun-Konch side is 26 km. It is a small rectangle. (Figure 31 (ii)M).

III. Hamirpur District

This district also has seven RAMs but there are only three RAMs in second order while the rest, all four, markets are in the third order. The second order RAMs are Rath, Maudaha, and Charkhari. The C I values of these RAMs are 66.87, 69.37, 55.62 respectively. Thus, Maudaha is the biggest RAM of the district. These three RAMs gives rise to a triangle of which base is located towards north between Rath and Maudaha. This is of 60 km. The appex is located towards south. Rath-Charkhari is 33 km while the Maudaha-Charkhari is 44 km. The triangle which covers about $1/8^{th}$ of the district is located roughly in the middle portion (with its base in north)of the district. (Figure 31 (ii) N).

It must be pointed out that the eastern U.P. region does not have any spatial design of the RAMs of the second order. All of these districts have been excluded due to the fact that no district has more than two second order RAMs.

The above analysis reveals that there do exist some spatial designs behind the distribution of the first order, and the second order RAMs of the state.

10. REGULATED AGRICULTURAL MARKET, LUCKNOW — A CASE STUDY

10.1 INTRODUCTION

After presenting the spatial analysis of the regulated agricultural markets — RAMs — of the state, it seems proper and even necessary, too, to study at least one RAM from near. Through this, various details come up which throw light on the real state of affairs. To acquaint with the real conditions under which an institution works, the detailed study is done as a case study.

10.2 OBJECTIVE

In view of the above, the scholar has made an effort to present the various minute details of one of the noted RAMs of the state. The objective of this endeavour, therefore, primarily, is to present in detail the case of the Regulated Agricultural Market, Lucknow vis-à-vis primary data collected through a detailed survey.

10.3 SELECTION OF THE CASE

The 'Lucknow Mandi' as it is popularly known, has been selected for case study just on random basis. The scholar does feel that there should have been more case studies of different level RAMs from different parts of the state. But due to the time and financial constraints, the scholar had to contend himself with just one case study. The Lucknow Mandi is one among the important ones of the mandies of Uttar Pradesh. Lucknow is the capital city of the state. Thus, this market is that of the state's capital city. This mandi is of first order of the hierarchical tier. To study the work done by the

state government through the establishment of the mandis, this selection has been made. Besides, as has already been mentioned for want of time and financial resources, too, this particular selection has been done.

10.4 METHODOLOGY

The methodology adopted for studying the details of this RAM, is the personal interview through survey schedules. The mandi yard has been visited, the officials of the market committee, the sellers/farmers, and the purchasers/traders have been contacted formally as also informally to get more and correct information of the functionining of the mandi. Three visits were paid to the mandi — one during the peak time immediately after the Rabi harvest in April, 1997; another one in the month of June, 1997, while yet another one took place in the month of August, 1998. Thus, besides collecting the secondary data from various govenment departments, the primary data has been collected for developing the case study. This data is based on three types of survey schedules (Appendix 7). The first schedule is about the information related to the regulated agricultural market itself. It includes as many as 18 aspects with various parts/sub-classes of the same. The second schedule is on farmer (producer/seller) information, while the third schedule is meant for trader/purchaser information. The second and the third schedules have 12 items each. On the basis of these schedules the primary data have been collected for presenting the real inside story of the market. The present write-up on the case of Lucknow is also basically divided into three major parts : the market, the farmers, and the traders.

10.5 THE CASE OF LUCKNOW

10.5.1 THE MARKET — THE MANDI

I. Location

Situated on both sides of the river Gomti, the city of Lucknow is the capital city of the state and has come up as one of the metropolitan cities of the country. It has been the capital city of the Nawabs of Awadh and has a historical past. Presently, it is also an important centre of education and learning. It is linked by national highways, and railways with all the important cities of the country. As per the Census, 1991, it has the population of 16,69,204 while the estimates are there that the present population of this metropolis is nearly three millions. It is a big urban agglomeration as also an important commercial centre of the state.

The Lucknow RAM, popularly known as Lucknow grain market established on 22nd July, 1972 is located near Purania on Sitapur Road — the national highway no. 24, in the trans-Gomti Lucknow. The site, at present, has come well within the city and not outside the city. The new yard of Lucknow mandi was constructed in the year 1978. The area of the yard is 31.312 acre. Besides, 3.5 acre of land just adjacent and attached with this main market has also been purchased in 1996 and the boundary wall has also been constructed. However, the construction of buildings etc. has not been started as yet. At the main new yard site, the transaction of 24 specified/notified items of agricultural produce had been transferred from Pandeyganj, and Daliganj localities on the date 28th August, 1978. Daliganj mandi had shifted to the present site in 1985 only and to one part of the yard, the fruit market had been shifted from the Kaiserbagh Mandi on 26th January, 1986. By first August 1986, the entire Mandi had been shifted to the present site.

II. Land-Use Analysis

The entire mandi yard spreads over an area of 12,6,755.00 m². The total land has been divided into fourteen types of uses as follows (percentages in brackets) :

The area under shops-cum-godown is 5780 m² (4.56), while the space for shops withoug godown is 12320 m² (0.33), and the retail shops have occupied 4452 m² (3.54). Approximately, equal to the area for the retail shops, there is a space for open platforms in front of shops, 7736 m² (3.10). The office complex of the market yard has been built up over an area of 3800 m² (2.99 per cent). The land has also been used for bank and post-office-buildings to the extent of 2800 m² (2.22). One-fifth of the total land of the yard has been devoted to roads, i.e 25,360.74m² (20.00). The parking space has been provided by the mandi as off-street parking as well as the main parking, 12,818.26 m² (10.23) and 6250 m² (4.73) — respectively. The total area under open space comes to 83274 m² (25.93) which is one-fourth of the total land under the yard. The auction platforms have been given an area equal to 4416 m² (3,48). The space devoted to pavements is 6350 m² (5.00) while the canteen space is 13.80 m² (7.08). It is clear from the above that the largest area is under open space (25.08) while second to it is the area under roads and pavements (25.00). The total area under parking is the next (14.96). Approximately one-fourth (22.72) of land has been occupied by auction platform, open platform in front of shops, shops-cum-godowns, shops without godowns, mandi godowns, and retail shops. The land under the canteen, bank, post-offices and the office complex is about half (12.29) of the open space. (Figure 32)

Besides, the main site at Sitapur Road, there are two more sites of the Lucknow mandi — one on Hardoi Road, and yet another one in Gomti Nagar. The present analysis is related to the Sitapur road campus only as the Hardoi Road of the Dubagga site has started functioning from June, 1998 only while Gomti Nagar site is still undeveloped.

REGULATED AGRICULTURAL MARKET LUCKNOW : THE MANDI YARD

Fig. 32

On Hardoi road, at Dubagga, the fruit and the vegetable mandi has been constructed and the sale/purchase of fruits and vegetables has also been just transferred here in June, 1998 from the Chowk Mandi. The down town, from the evils of environmental pollution on the hand and traffic jams on the other, has, thus, been freed. The Dubagga Mandi is rather a big scheme being implemented at a fast rate. The entire developmental work is spread over 15 acres of land for which Rs. 1,40,00,000 has been approved by the government. The preparational work on the third campus in Lucknow — the Gomti Nagar Mandi campus is also to start soon.

III. The Nature of Mandi

The agricultural produce market committee — the Mandi Samiti — Lucknow has, primarily, a primary market, in case of arrivals of various cereals, vegetables and fruits. Otherwise it is a secondary market. Since Lucknow is an important commercial centre of the state, in addition to the primary arrivals, there are some secondary arrivals of some crops which are brought to this mandi from various market areas of the state as also outside the state such as Orissa, Maharashtra, Andhra Pradesh, Kerala, Gujarat etc. too. It is a A Special class of mandi as classed by the U.P. Mandi Parishad meaning thereby that much more than Rs. 80,00,000 is collected as market fee every year.

The major primary arrivals consist of paddy, rice, potato, wheat, mango, and arhar. The secondary arrivals include gram, wheat, urd, and various fruits like apple, grapes, bannana, orange etc. as also the various Kirana items too.

The Dashahari mango variety due to its taste and flavour, is not only widely demanded in this country, rather in other parts of the world as well. This mango variety came out of a small village, named 'Dashahari' near Kakori in Lucknow district. It is widely produced in

a large area in and around Malihabad in Lucknow. This variety is, in large volumes, sent to other parts of the country as well as various countries of the world. Ensuring proper production, and sale of this crop a 'mango belt' around Malihabad has been declared by the U.P. Government. This belt is also specially attended to by the governmental/non-governmental agencies.

IV. Market Area

The agricultural produce market committee, Lucknow has its mandi area — the notified area — which consists of the area of 57 Nyaya Panchayats, and Gram Sabhas under five development blocks of the district. The area of the various development blocks is as follows : Kakori, 22,594 hectare; Chinhat, 21,446 hectare.; Bakshi Ka Talab, 37,782 hectare; Mal, 25,382 hectare; Malihabad, 21,092 hectare. The largest number of Panchayats and Gram Sabhas are from the Malihabad followed by Kakori, and further followed by Bakshi Ka Talab. All the villages of these 57 Nyaya Panchayats and Gram Sabhas fall under the notified area of the Lucknow Regulated Agricultural Market. Some of the other important villages of the notified area are Kasmandi Kalan, Kasmandi Khurd, Itaunja, Kursi, Bharawan, Gori-Gurwan, Paigaramau, Bidiapur, Asti, Mahona, and Behta (besides kakori, Chinhat, Bakshi ka talab, Mal, and Malihabad). These are the major villages from where the primary arrivals of crops take place at this market. The market is well connected with entire market area by metalled/unmetalled roads.

The 10 major crops of this RAM are paddy, wheat, barley, bajra, maize, Arhar, gram, Urd, mustard, and groundnut. The percentage of area sown under these crops is as follows : Paddy : 20.50, Wheat : 47.50, Barley : 8.00, Bajra : 3.20, Maize : 4.25, Arhar : 4.20, Gram : 4.30, Urd : 4.25, Mustard : 0.85, Groundnut : 0.95.

The percentage production of these major crops in the market area of Lucknow RAM is as follows : Paddy : 12.22, Wheat : 40.21, Barley : 1.00, Bajra : 0.55, Maize : 1.00, Arhar : 1.20, Gram : 1.08. Urd : 0.55, Mustard : 0.03, Groundnut : 0.06, Potato and others : 42.10. Some other seasonal items are gur, khandsari, lobia, and til.

V. Sub-Yards

The four sub-yards came into being in 1972 which are attached with Lucknow only. These are Malihabad, Itaunja, Mal, and Bakshi Ka Talab. About Rs. 20,00,000 annual mandi fee is received at each of these markets by the government.

VI. Facilities

The main objectives of the Mandi Samiti would not be fulfilled until and unless the appropriate and adequate facilities and conveniences are not made available to the market functionaries specially the farmers at the market yard for the sale of their produce at the most competitive price. In the new market yard, a number of basic and modern facilities have been made available for the farmers to a great extent. Amongst these are the facilities of drinking water (with overhead tank as also the India Mark II hand pumps), canteen, bank (State Bank of India), police out-post, post-office, rest-house, toilets, roads, shades, light, cleanliness etc.

All the basic facilities for market functionaries have been constructed at this new yard (Mandi Vikas, 1990 August - December) but these are not well maintained and rather some of these have been seen under very poor condition.

Besides the basic facilities, the market committee provides the major modern facilities like existence of Kisan Bazar. This Bazar consists of 50 shops known as input shops near the gate outside the

campus. These shops have the items of farmers' needs like good quality seeds, fertilizers, insecticides, pesticides, fodder, etc. In addition, modern machines like weighing scale, moisture meter have also been installed. A very significant major modern facility — the grading unit already installed is however out of order/defective at this time and hence not functioning although the machine is quite costly. There is just one godown (of the mandi with one thousand metric tonnes of capacity) which is centrally airconditioned. It has been let out to the Central Warehousing Corporation. This godown is spreading over 5 - 6 acres of land. It includes 10 C type godowns within itself.

A flying squad of the Mandi Samiti also makes surprise inspections from time to time and at place to place in the market yard especially during the processes of sale/purchase.

VII. Shops

The market yard, besides auction platforms has three types of shops. There are six platforms of 12 X 72 m size each. No rent or any other charges are taken from traders for the platforms. The shops are A type, B type, and C type — old and new. The areas of both the old and new shops are also same, but the rents are different according to the time date of construction.

There are 22 old A type shops on Rs. 300 per month rent. The A type shops built afterwards are 26 in number and their montly rent is Rs. 800 each. The B type shops are let out at the rate of Rs. 180 per month for old ones while Rs. 410 and Rs. 440 per month for the new shops. There are 31 C types shops of which rent is Rs. 90 per month each. All these shops are meant for grains and fruits.

The vegetable shops are, however, different in nature. There are 12 A type shops with a monthly rent of Rs. 800; 17 B type shops with

Rs. 600 per month rent; and 72 C type shops are on Rs. 480 per month rent.

The Dubagga Mandi has 22 B type shops measuring 71.20 m^2 each with Rs. 1000 monthly rent; there are 117 C type shops measuring 33.04 m^2 each on Rs. 180 monthly rent. There are also 96 module shops which have been formed by raising temporary partitions of auction platforms of 12 x 72 m^2 each, other platforms with 9 x 80 m^2 each, as also four of 12 x 60 m^2 each. All these platforms are covered. Besides, there is a fish mandi also at this site which was transferred to this place on 31.3.1995. The functioning of this mandi started on February, 1998 although this transfer was complete by January 2, 1996. It has three types of shops as : A, two in number on Rs. 1005 per month; B, six in number on Rs. 645 per month; and C, 63 in number on Rs. 420 per month rent.

It is also significant to mention that despite the fact that the Pandeyganj traders have got allotted their shops at this mandi, they have taken their business back within two years in 1980 only to the Pandeyganj mandi only on the pretext of lack of facilities etc. The mandi officials keep on watching their business there in Pandeyganj area too, and they have sent notices to the traders for Rs. 5,00,000 as mandi fee but despite the high court judgement (in favour of mandi) dated 5.3. 1998 for the recovery, the mandi could not get any payment till now (although, since 1980 till now the fees amount has increased due to accumulation of interest totalling to Rs. 30,00,000).

VIII. Attendance

One hundred and forty farmers and about 150 traders were present on the day at the time of visit made by the investigators. However, there are as many as 200 registered traders, besides the village

merchants at this market. There are 32 commission agents (aratiyas), 100 - 200 millers, and 200 - 500 traders. The attendence in the market varies from 500 - 1000 persons. Generally, 150 farmers visit the market daily but during the peak days the number reaches even 300. It has come to the knowledge that a large number of farmers go to the nearby unregulated/conventional mandis for the sale of their agricultural produce. In case these farmers also bring their produce to this regulated market then the attendance would increase sharply to become even more than 1000.

IX. Income

The Mandi Committee has several sources of income but the most important one is that of market fee. The market fees are those charges which are paid by the purchaser-trader to the market committee on the sale of the agricultural produce of the farmer. The market fee had been charged at the rate of just 1.5 per cent upto 14.12.1994. From 15.12.1994 it has been increased to the rate of 2 per cent of the total sold value. It is paid by the purchaser to the mandi. Now 0.5 per cent fee has just been increased with effect from 15 August, 1998 under the head 'development tax'. Thus, 2.5 per cent in all is charged from the trader as market fee. The total amount of market fee is collected during the recent past is much more than Rs. 2,00,00,000 per annum. The present total annual income through this head, thus, is about Rs. 3,00,00,000 to the market committee (despite the fact that a large number of farmers take their agriculture produce to nearby non-regulated agricultural markets which costs a loss of 1,00,00,000 per annum). It is important to note that the mandi fee from grains is getting down year by year while it is increasing through other items particularly fruits — more particularly apples.

The traders are given license for making business at the market yards. The license fee formerly was charged at the rate of Rs. 50 from commission agents, Rs. 75 from the small wholesalers, and Rs. 100 from the whole salers, but now it has been revised and a flat license fee at the rate of Rs. 250 per annum is charged from all types of traders.

In addition, the rent of the shops and other buildings also bring some income to the market committee .

X. Commodity Structure

All the agricultural produce including types and sub-types as mentioned in Chapter 3 are brought for sale to this mandi. Thus, the commodities include the farm produce, the horticulture produce, the grape cultivation, animal/ livestock produce, and forest produce.

XI. Crop Arrivals

I. Year-wise

The crops as mentioned above are brought by the farmers for sale at this mandi. It has been observed that the total arrivals of all the crops during the last ten years, upto the year 1997 – 1998, have been more or less the same. No unusual or very significantly marked changes in volumes of these crops have been noted. The total arrivals during the period 1988-89 to 1997-98 (i.e. ten years) have been in between 34.43 lakh to 43.24 lakh quintals. It has been 34 lakh quintal during 1992-93 while the volume during 1990-91 was 43 lakh quintals. However, the primary arrivals during these years have been varying from 22.15 lakh to 29.48 lakh quintals (during 1997 – 98, and 1988 – 89 respectively). The secondary arrivals have been varying during the same period from 10.40 lakh to 17.38 lakh quintal (during 1992 – 93, 1996 – 97 respectively). The details of these are shown in Table 10.1 as also in Figure 33.

350

REGULATED AGRICULTURAL MARKET LUCKNOW

TREND OF CROP ARRIVALS
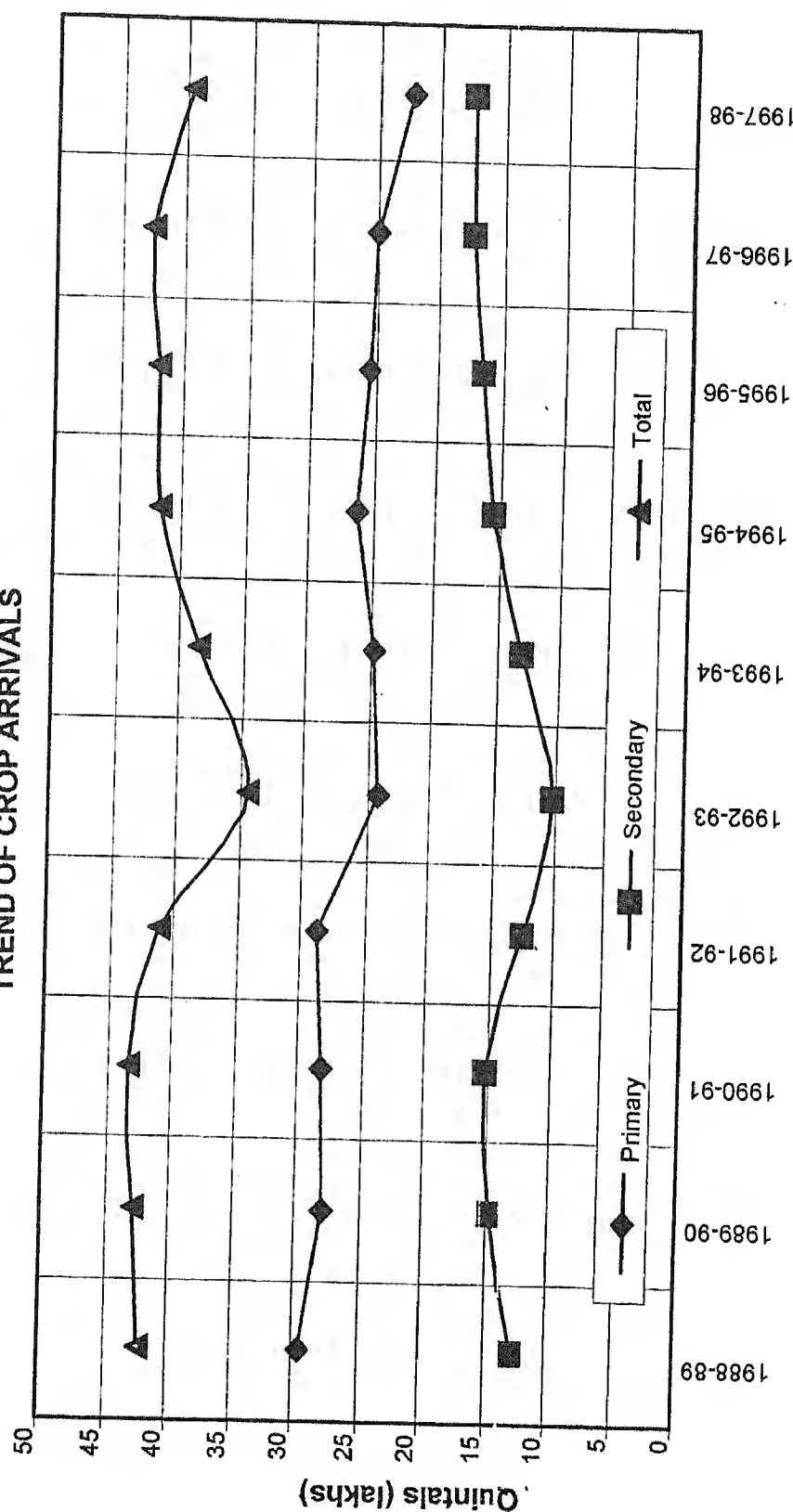
Fig. 33

Table 10.1 : Regulated Agricultural Market Lucknow — Trend of Market Arrivals

Year	Quintals		
	Primary	Secondary	Total
1988 – 89	29,48,122	12,58,097	42,06,219
1989 – 90	27,90,270	14,67,205	42,57,475
1990 – 91	28,16,329	15,08,579	43,24,908
1991 – 92	28,69,927	12,51,534	41,21,461
1992 – 93	24,02,319	10,40,923	34,43,242
1993 – 94	24,53,502	13,97,254	38,50,756
1994 – 95	26,20,759	15,36,608	41,57,367
1975 - 76	25,33,361	16,42,875	41,76,236
1976 – 77	24,96,624	17,38 218	42,34,842
1977 – 78	22,15,651	17,24,597	39,40,248

Source : Mandi Samiti, RAM, Lucknow .

II. Commodity-wise

This part includes the arrivals of major groups of produce i.e. the five specified groups — the farm produce, horticulture produce, grape cultivation, animal/livestock produce, and forest produce. The farm produce group is the most important one from the standpoint of foodgrains. There are seven sub-types of this groups of items. The total arrivals of these seven sub-types of items during the last four years i.e 1994-95 to 1997-98 have been presented through Figure 34. The arrivals of various commodities during the said 4 years has been represented through 10.2.

REGULATED AGRICULTURAL MARKET LUCKNOW : FARM PRODUCE ARRIVALS

Fig. 34

352
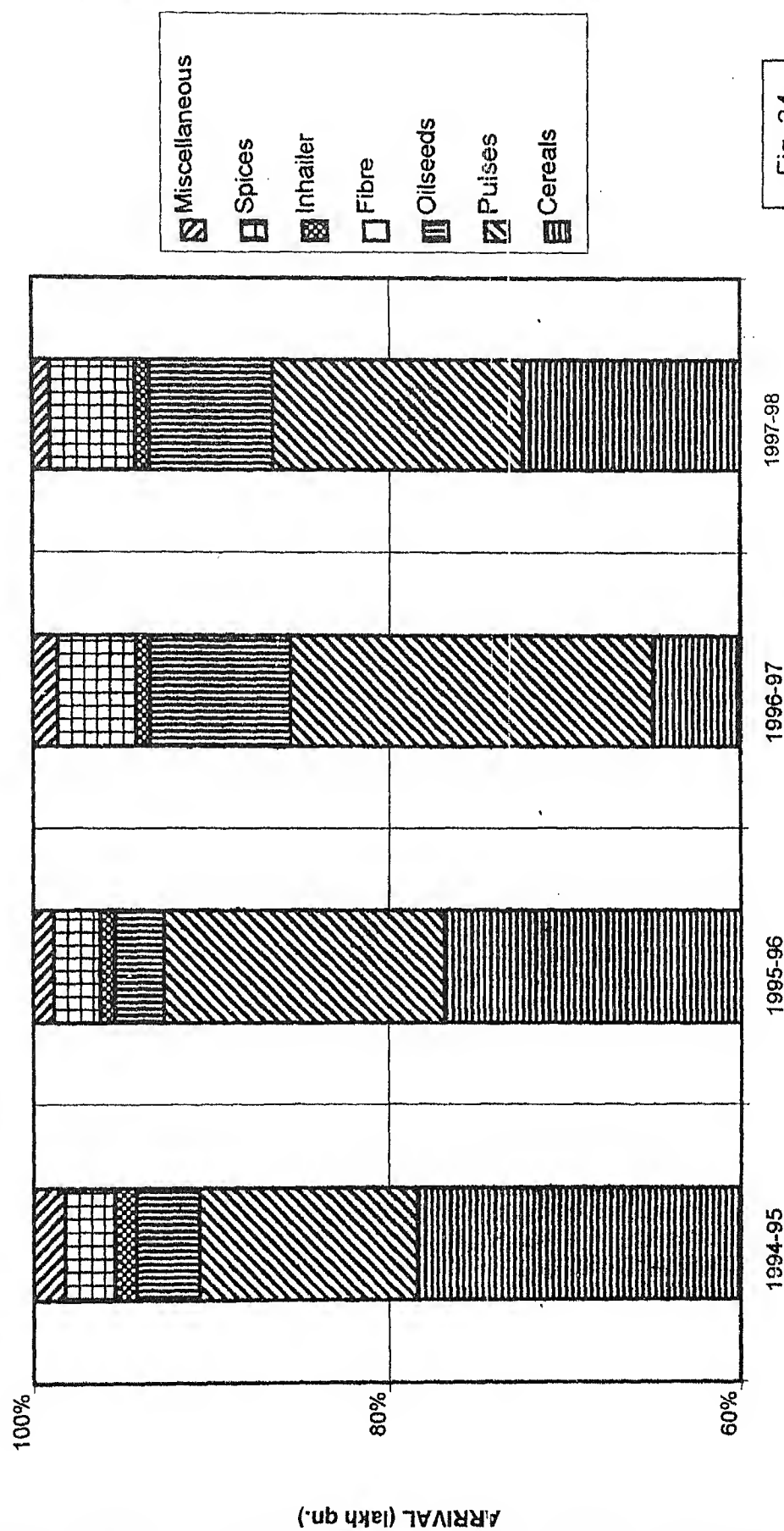
REGULATED AGRICULTURAL MARKET : LUCKNOW -
STRUCTURE OF CROP ARRIVAL (1997-98)

Farm Produce
Horticultural Produce
Grape Cultivation
Forest Produce
Livestock Produce
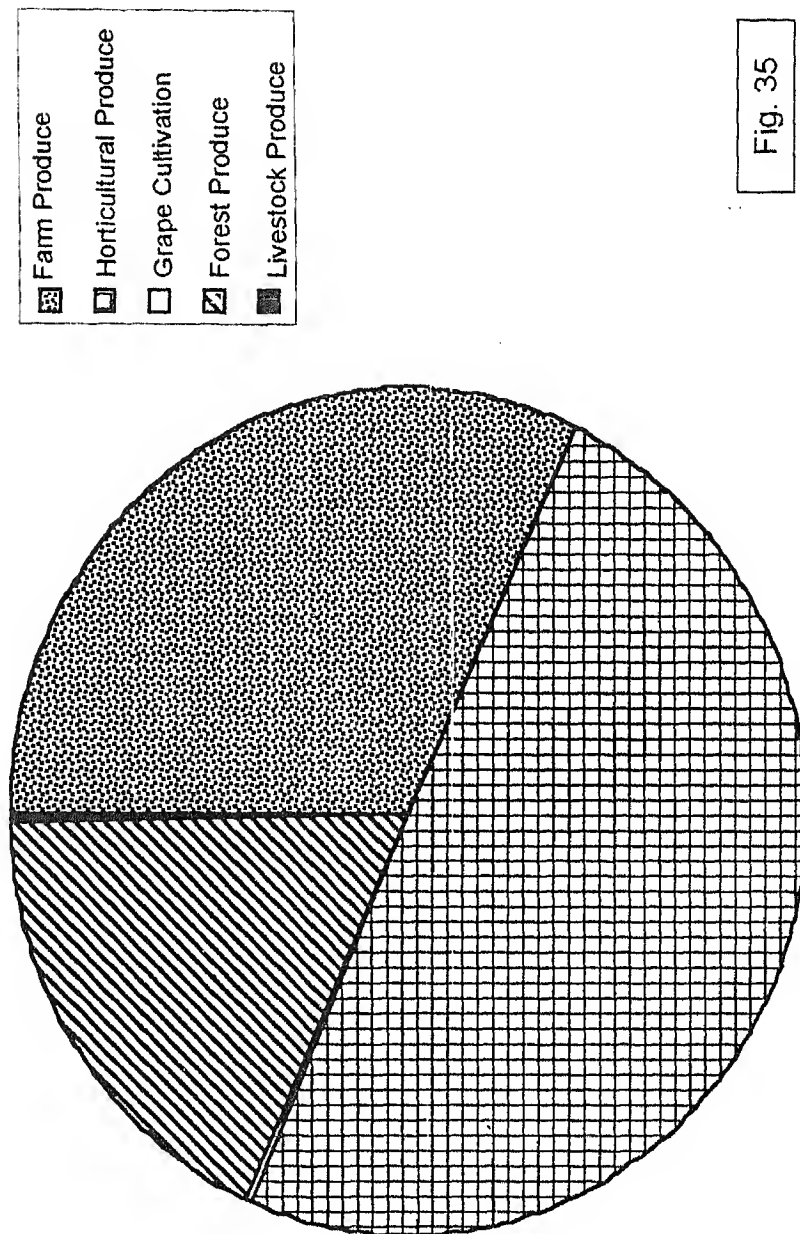
Fig. 35

The observations show that the arrivals of cereals varied from 7.38 lakh quintal in 1996-97 to 11.9 lakh quintal in 1994-95. The arrivals of the pulses varied from 1.73 lakh quintal in 1997-98 to 2.33 lakh quintal in 1996-98 . The oil-seed arrivals have been varying from 37.47 thousand quintal in 1995-96 to 90.18 thousand quintal in 1997-98. The fibrous crop arrivals have varied from 746 quintal in 1994 -95 to 1440 quintal in 1997-98. The inhailer/tobacco arrival has been changing from 8.37 thousand quintal in 1996-97 to 16.10 thousand quintal in 1994 – 95. The spices-arrivals have been from 36.90 thousand quintal in 1995-96 to 56.50 thousand quintal in 1997-98. The volume of arrivals of the miscellaneous items have been varying from 13.43 thousand quintal in 1997-98 to 24.03 thousand quintal in 1994-95.

The changes in arrivals of the horticultural produce have been as : 10.20 lakh quintal in 1997-98 to 12.45 lakh quintal in 1994-95 in case of vegetables, while in case of fruits it has been from 7.88 lakh quintal in 1994-95 to 9.60 lakh quintal in 1997-98.

As far as it is related to the grape cultivation, the arrivals varied from 15.33 thousand quintal in 1997-98 to 32.59 quintal in 1994-95.

In case of live-stock/animal products, the arrivals varied from 7.30 thousand quintal in 1994-95 to 14.45 thousand quintal in 1996-97.

In the case of forest products the arrivals have been changing from 6.74 lakh quintal in 1994-95 to 7.40 lakh quintal in 1996-97.

The total of all these have been varying from 39.40 quintal lakh in 1997-98 to 42.34 lakh quintal in 1996-97. The various figures relating to these items and 4 years as referred have been graphically demonstrated through Table 10.2 as also in Figure 34.

Table 10.2 : Regulated Agricultural Market Lucknow – Arrivals

QUINTALS

Commodity	Years			
	1994-95	1995-96	1996-97	1997-98
A. Farm Produce				
Cereals	11,09,310	10,20,907	7,38,589	8,71,781
Pulses	1,74,580	2,10,491	2,33,945	1,73,271
Oilseeds	51,906	37,477	90,180	84,002
Fibrous Crops	764	953	1,423	1,440
Inhailers	16,100	9,057	8,371	9,613
Spices	42,577	36,901	51,864	56,508
Miscellaneous	24,035	15,596	15,492	13,436
B. Horticultural Produce				
Vegetables	12,45,232	12,01,664	18,98,931	10,20,791
Fruits	7,88,073	8,69,685	8,97,926	9,60,403
C. Grape Cultivation	32,495	32,250	25,031	15,332
D. Livestock Produce	7,303	9,736	14,455	12,456
E. Forest Produce	6,74,892	7,16,517	7,40,179	7,25,025
Grand Total	**41,57,367**	**41,76,236**	**42,34,842**	**39,40,248**

Source : Mandi Samiti, Regulated Agriculture Market, Lucknow

III. Arrivals 1997-98 with Commodities

Efforts have been made to collect the primary data relating to the primary, secondary and the total arrival of all the specified/notified items at the Lucknow Mandi (Appendix 4; Figure 35).

A. Farm Produce

Cereals : In case of cereals, 8 items — paddy, rice, jowar, bajra, maize, wheat, barley, and jaai — the primary, secondary, and the total arrivals have been as 3.79 lakh quintals, 4.92 lakh quintals, and 8.7 lakh quintals

respectively showing that there is no striking difference between primary arrivals, and secondary arrivals.

Pulses : In case of pulses, the respective figures have been 10,000 quintals, 1.63 lakh quintals, and 1.73 lakh quintals indicating striking difference meaning thereby that the secondary arrival is about 16 times than that of primary arrival.

Oil Seeds : In case of oilseeds, the primary arrivals have been 2.50 thousand quintals as against the secondary arrivals of 81.45 thousand quintals. The total of the two has been 84.00 thousand quintals. This shows about 40 times arrivals of the secondary items than the primary items.

Fibrous Crops : In these crops, there have been absolutely no primary arrivals while the secondary arrivals were of 144 thousand quintals.

Inhailer/Tobacco : In this case also, there were no primary arrivals at all while the secondary arrivals were recorded as 961 thousand quintals.

In case of spices, only coriander had the primary arrival of 5 quintals while the secondary arrivals of various other items have been more than 56.50 thousand quintals.

However, the other items considered under miscellaneous have recorded 21 quintals and 13.40 thousand quintals (primary is gur only) totalling to 13.43 thousand quintals. In this case, except gur, all the arrivals are the secondary arrivals. There have been 3.91 lakh quintals as primary arrivals, 8.18 lakh quintals as secondary arrivals, and thus, 12.10 lakh quintals has been the total arrival showing that the secondary arrival is more than double the primary arrival.

B. Horticultural Produce

In case of vegetables, 23 various items like tomato, potato, onion etc. have been important. The primary, secondary, and the total arrivals of the vegetables have been 7.59 lakh quintal, 2.60 lakh quintal and 10.20 lakh quintals respectively. This shows that the primary arrival is about three times the secondary arrival. In case of fruits (about 20 types) the primary arrival has been 4.77 lakh quintals while the secondary arrival has been 4.83 lakh quintals totalling to 9.6 lakh quintals. This shows that more or less equal figures have been there, in these cases. The totals of the horticultural produce have been as 12.37 lakh quintals of primary arrivals, 7.44 lakh quintals of secondary arrivals, and 19.81 lakh quintals, the total arrival. These figures show that the primary arrival is nearly double than the secondary arrival.

C. Grape Cultivation

Only the secondary arrivals of 15.33 thousand quintals of grapes have been recorded.

D. Animal/Live-stock Produce

Only one item i.e. ghee is there under this head. The primary arrival of ghee is 11.27 thousand quintal, the secondary arrival is 1.18 thousand quintal, while the total arrival has been recorded as 12.45 thousand quintal. These figures show that the primary arrival is 11 times than that of the secondary arrivals.

E. Forest Produce

There are two items , gond and wood in this reference. Gond has the secondary arrival while wood has recorded both the primary, and the secondary arrivals, although the primary arrival is more or less 5 times the secondary arrival. The forest produce arrival totals are as 5.75 lakh

quintals, 1.49 lakh quintals, and 7.25 lakh quintals. These figures show that the primary arrivals are more or less 4 times the secondary arrivals.

In case of grand total, the figures recorded are 22.15 lakh quintals, 17.24 lakh quintals, and 39.40 lakh quintals. These figures show that the primary arrivals are nearly one and a half-times the secondary arrivals. Thus, the primary arrivals are much more than the secondary arrivals.

XII. Problems and Programmes

I. Loss of Income

It has been observed that primary arrivals at Lucknow RAM are actually as low as 20 per cent of the expected volume due to the fact that about ten non-regulated/conventional agricultural market-places do heavy business in and around Lucknow such as Pandeyganj, Murlinagar, Sahadatganj, Chinhat, Dobagga, Bakshi Ka Talab, Banthra etc. The functioning of these traditional grain markets is neither controlled nor regulated. Hence, it causes a great loss to the state government.

The present Lucknow Mandi is characterised by Paddy crop arrival which occupies a large space which is not available at other traditional markets particularly those inside the Lucknow city. Thus, farmers in large numbers bring paddy crop to the RAM otherwise only about 20 per cent of the farmers as well as the volume of crops arrive at Lucknow market which causes a great loss amounting to more than Rs. 1,00,00,000 per annum to the government. Therefore, all the grain markets are to be shifted to the mandi site only. All the arrivals should be thus at one place — the mandi yard. The mandi income, therefore, would increase considerably.

II. Lack of Adequate Storage Facilities

For proper marketing of perishable items, there is a great need of cold storage for keeping them. These items are fruits, and vegetables. However, there are no adequate cold storage arrangements for keeping enough fruits, and potato, although potato is sent from Lucknow to various markets of the country. There is just one godown with 1000 metric tonnes capacity in the mandi campus which is quite insufficient in view of increasing trade in the fruitsand vegetables in this market. The observations show that the cold storage facilities should be trippled atleast.

III. Basic Facilities

Some problems are related to the inadequate general/basic infrastructure of physical facilities on the one hand while the functioning of the market itself on the other. Although, there can be no two opinions about the truthfulness of the fact that the RAM of the capital city of the state — Lucknow — is in general far ahead than many others in the state. The existing physical facilities in view of the growing needs of the people with the passage of time are getting inadequate in general. Besides, also there can be no two opinions about the inability and/or slackness on the part of the market committee, in general, to maintain all the installed physical facilities properly as sufficient funds are not available with Samiti. The facilities like open and covered platforms, rest house, parking space, cattle shed, Charhi, canteen, toilets, water huts, and godowns especially are not maintained. Photographs show the poor maintainence of the areas in and around the grain market (photograph 1), the fruit market (photograph 2), and the vegetable market (photograph 3). There are also general complaints about sanitation, electricity, and first aid/medical facilities at the market yard. The fruits, and vegetables being the perishable commodities, if not carefully kept, create the environmental degradation problems having adverse effect on health of the market functionaries.

PHOTO 1. REGULATED AGRICULTURAL MARKET LUCKNOW : POOR MAINTENANCE OF YARD

A VIEW OF GRAIN MARKET

PHOTO 2. REGULATED AGRICULTURAL MARKET LUCKNOW : POOR MAINTENANCE OF YARD
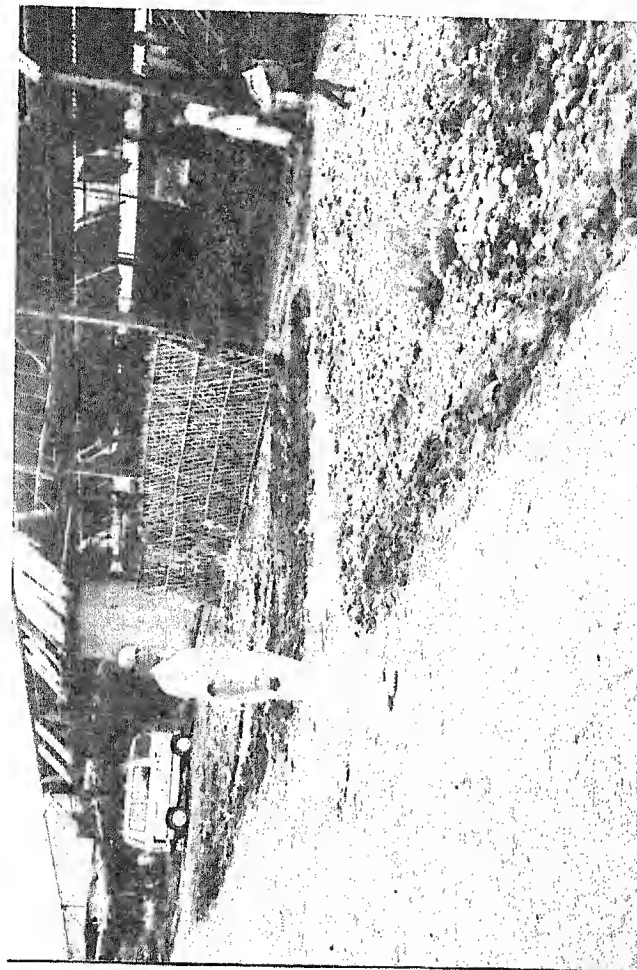
A VIEW OF FRUIT MARKET

PHOTO 3. REGULATED AGRICULTURAL MARKET LUCKNOW : POOR MAINTENANCE OF YARD
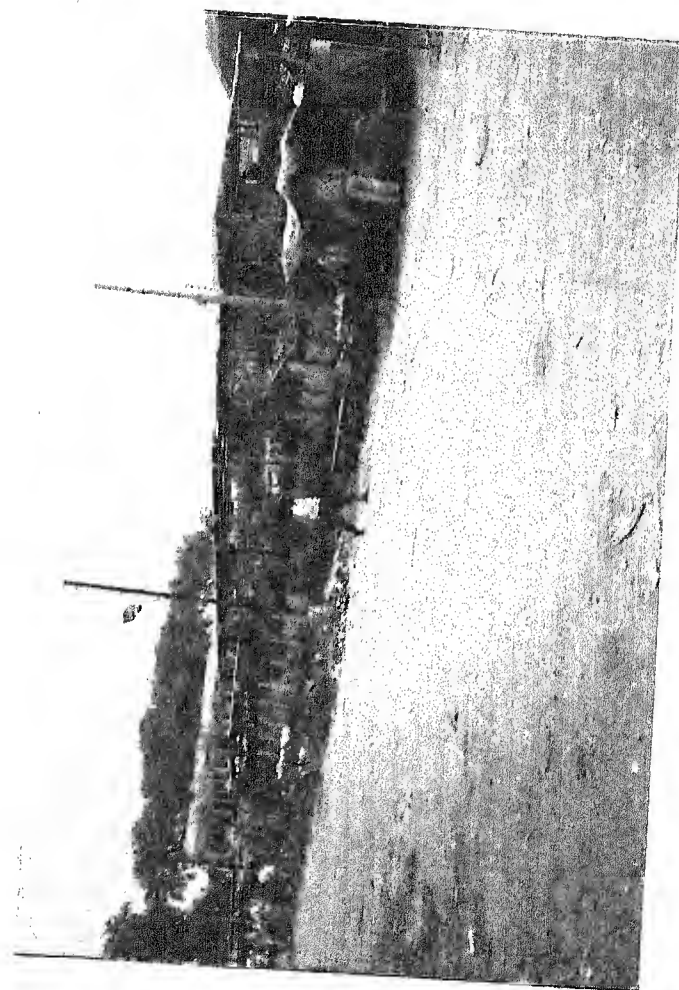
A VIEW OF VEGETABLE MARKET

The unhygenic atmosphere is created by the spoiled fruits and vegetables on the campus, there are no proper facilities for dumping the waste material. There is also just one entrance of the Mandi, which is characterised by a long-que of the farmers every morning waiting for the entry. This causes a great inconvenience, loss of time and energy for the producers-sellers. This is also one of the reasons that a large number of farmers prefer to go to other markets in the vicinity — non-regulated ones.

The development of the infra-structural facilities and maintenance is one of the dire needs of the mandi for which higher budget amount be allotted to the Mandi Samiti. The Mandi officials are of the view that despite heavy income from the mandi, there is a great problem to meet the expenses due to the government orders and the small budgetary allotments. The mandi officials feel, the powers are highly centralised at the Mandi Parishad. The market committees have no effective measures to control the traders by effective regulation over the entire state.

IV. Lack of Proper Marketing Process

It has also been observed that practically at times no auctions take place in the sale process of the agricultural produce of the farmers because of some understanding between the commission agents and the traders. Rather, farmers are, for one reason or the other, indirectly impressed by the purchasers-traders to leave their produce with the commission agents who ultimately pay less remunerative rates to the farmers.

A very surprising fact has come to light that a group of traders, also works at the Mandi gate as Mafia traders. The farmers are, generally, threatened by these Mafia traders for taking their

agricultural produce to their (i.e. Mafia traders') shops particularly located in Pandeyganj, and Daliganj areas. Thus, it seems that the mandi is not functioning properly in the interest of the farmers to the extent it should.

It has been mentioned by the officials of the market committee itself that for the proper functioning of the mandi, the management has been superseded by a government administrator — the ADM trans-gomti. This clearly shows that there is a great need of management of the market activities which are not properly functioning at the Lucknow RAM.

In the interest of farmers, the true marketing process as such has to be followed without fail by all concerned as also marketing in conventional site is still going on despite a regulate market yard. This traditional marketing has to be stopped. This would favour both the farmers as also the government besides the general public, from the hustle-bustle at the conventional grain market sites.

V. Programmes in Farmers' Interest

Some new schemes have also been introduced in favour of the farmers by the market committee such as Scholarship to farmers children, Bakhari Scheme, Insurance Policy — Samuhik Bima Yojna — the Group Insurance Scheme.

10.5.2 THE FARMERS — THE SELLERS/THE PRODUCERS

The farmers are the most important part of all the market functionaries as these are the ones for whom the government has brought out the regulation as they were being cheated and were not getting the proper benefit for their agricultural produce at the conventional agricultural markets. Keeping in view their significant position, the survey of these functionaries of the market was done

through various angles, the results of which are being presented below :

I. Major Villages

Although, the Lucknow Mandi, like every other mandi in the state, has its own notified area which includes a number of villages from where the farmers come to sell out their agricultural produce at this market, there are some major villages of which mention is necessary.

About one-third of the farmers surveyed/interviewed came from 20 km distance. Itaunja is one of the most important villages in this respect. Next in order, the farmers were from Bakshi Ka Talab, Mehmoodabad, Behta, and Kursi Road. Each of these villages contributed to the extent of 12 per cent meaning thereby that half of the farmers, contacted, came from these villages to the Lucknow mandi. Kamlapur is another important village from where a large number of farmers come to this mandi. The percentage of these farmers is eight. The rest of the farmers came from Kharagpur, Madiaon, and Mohan. Each of these villages contributed four per cent farmers to the market.

II. Social Structure

Although all the major castes of Hindus have been observed to be present in the market as producers-sellers or the farmers, Muslims also formed an important part of these market functionaries. There were Brahmins, Vaishya among the upper castes; and Blacksmiths, Yadavas, and Pals among the backward caste, while several farmers belonging to schedule castes also were present as sellers of agricultural produce in the market. Besides, there were Muslims too.

It has been observed that 28 per cent of the interviewed producer-sellers were amongst the upper hindu castes. Their percentage is second to the backward castes — and it stands for the highest, 40 per cent. It is quite interesting to note that after these two castes, there were Muslims who contributed to 24 per cent meaning thereby that amongst the producers-sellers who were surveyed, about one-fourth have been from Islamic origin. Thus, they play an important role in this context. However, the percentage of scheduled caste as producers-sellers has been the lowest — just 8 only. This clearly shows that their position as sellers is not significant in comparison to other hindu castes, and Muslims.

III. Education

As far as it is related to education of the interviewed farmers, it is worth mention that the percentage of illiterate farmers is the minimum — only four per cent. On the other hand also, the percentage of the farmers with higher education is the same i.e. four. The highest percentage was of the farmers who had received education upto high school or intermediate standard. The percentage of such farmers is 48. Thus, nearly half of the interviewed farmers had recieved education upto 10 or 10 + 2 standard. Another significant part is of those who received only basic/primary, and junior high school education. The percentage of such farmers is 44 which is although, second in rank but only little bit less than the first ranker. However, of the total farmers, 4 per cent were illiterates too. On the other hand, there were 4 per cent of the farmers who received higher/university education too. It is significant to mention that those who entered agriculture as their occupation, had not any education and/or training in agriculture. Rather, even after receiving higher education, they entered the agriculture profession due to poverty and unemployment only.

This shows that the most of the farmers had received education and also that the most of such farmers had received education upto high school and/or intermediate standard.

IV. Road Linkages and Mode of Transport

Here, it is also significant to note that all the major villages of the notified area are linked with the Lucknow Mandi by 'pucca' road — metalled road.

In bringing their produce to the Mandi from their villages, the farmers take upto two hours. There are 36 per cent farmers who take 1 - 2 hrs. in reaching the market with their produce. Sixteen per cent of the farmers take less than one hour time while 32 per cent farmers take more than two hours to reach the Mandi place. This distance is travelled by tractor or tonga in which they carry their produce.

V. Distance covered

The most of the farmers who had been interviewed came from a distance of 10 - 20 km. Their percentage is 72. Thus, nearly three-fourth of the entire sellers came from the villages which are located between 10 - 20 km. Those who came from less than 10 km. formed 16 per cent while those who came from more than 20 km formed 12 per cent. This also makes it clear that the most of the major villages which participate in the selling process are located between 10 - 20 km. from the Mandi Yard.

VI. Reasons of Visits

The farmers come to Lucknow Mandi for two major reasons : vicinity and competitive prices. While 45 per cent of the farmers told that the first reason for them to prefer for this Mandi was vicinity, the

same percentage of farmers was in favour of competitive price too. Ten percent farmers viewed that they had been coming to the mandi as it was the only big mandi in the entire area of their reach.

The transport cost per quintal is not high. The farmers pay Rs. 5/- per quintal for a short distance, and Rs. 10/- per quintal for comparatively long ones. There were 48 per cent farmers who paid only Rs. 5/- per quintal while 52 per cent of them paid Rs. 10 per quintal.

VII. Yard visits

The farmers visit the market during both the Rabi, and Kharif crop-seasons. They have several visits during both the seasons for selling their agricultural produce. However, it has been observed that a large number of farmers visit the market several times during both the seasons.

During the Kharif season 44 per cent of the farmers make as many visits as 13 while 40 per cent of the sellers make only upto 6 visits during the season. The rest of the farmers i.e. 16 per cent, have their visits during this season in between 6 and 12.

During the Rabi season 48 per cent of the farmers have only upto six visits while 44 per cent of the farmers have as many as 13 visits to the mandi. Only 8 per cent of the farmers have 6 to 12 visits during this season.

This clearly shows that during the Rabi season, the farmers sell out their crops within some visits to the market while during the Kharif season they make more visits to dispose off their produce. The prices play an important role in the number of visits by the farmers to the market.

VIII. Weekly Markets

When the farmers were questioned about attending any other market — they responded in a very interesting way. Although, the farmers coming to Lucknow Mandi for selling the most of their agricultural produce, sometimes, they also go to sell their produce in the weekly markets too. The most important reason for this is the vicinity of these weekly markets. These markets are located either in the villages of the farmers only or only within 5 km from their villages. For fulfillment of urgent or emergent needs of their families, some farmers sell their produce at these market places. The percentage of the farmers going to various such markets are as follows. Itaunja : 32; Behta : 24; Bakshi Ka Talab : 12; Mehmoodabad : 12; Kamlapur : 8; Mohan : 4; Others : 8. This clearly shows that one-third of the farmers attended the weekly market at Itaunja, while nearly one-fourth of them attended the Behta weekly market. About one-eighth of the farmer go to Bakshi Ka Talab, and Mehmoodabad each while one-sixteenth of them attend the Kamlapur weekly market. It must be noted that the volume of sale in the weekly market is considerably low in comparison to that sold in the regulated market.

IX. Land Holdings

After the survey, it was observed that the farmers who visited the yard had small land holdings. As many as 52 per cent of the farmers had only upto 10 bighas of land each. As against this only 16 per cent of the farmers had more than 20 bighas of land each. Thus, 32 per cent of the farmers had their land holdings between 10 and 20 bighas (each).

Out of these holdings, however, the most of the land is under irrigation. Only 8 per cent of the farmers have more than 20 bighas

of their land under irrigation, while as many as 56 per cent of the farmers have only upto 10 bighas of their land under such conditions. Thus, 36 per cent of farmers. have their land under irrigation conditions and that their holdings are between 10 and 20 bighas.

It is, however, a point to note that 28 per cent of farmers had absolutely no unirrigated land while only 4 per cent of the farmers had their unirrigated land beyond 5 bighas each. The most of the farmers' unirrigated land falls only under 5 bighas each. The percentage of such farmers is as high as 68.

X. Crop Structure and Market Surplus

Wheat and Paddy have emerged as the major and predominating crops amongst the farmers interviewed for the purpose. It is interesting to note that all the 100 per cent farmers grow both wheat and paddy. Pulses are grown by 44 per cent of the farmers, while potato is grown by 48 per cent of the farmers. Oil seeds, and sugarcane are also produced by 4 per cent each. Other crops are just in too low percentages. Thus, cash crops are not the prominent ones. Only the food crops have the key position in the volume of production.

It has also been noted that the marketed surplus of these famers is quite low in relation to the total volume produced. This is because the producer-sellers keep a large volume of the crops for their home consumption. Besides, for seed purpose also quite a significant part is saved. In addition, some farmers also pay wages to the labourers in the form of produce (and not in the form of cash payment due to their financial conditions at that time). And yet as many as 90 per cent of the farmers have mentioned that their annual surplus has been increasing during the last 5 years.

XI. Factors Affecting Sale Decision

When asked about the time for sale, it was observed that the selection decision was affected by several factors. As many as 96 per cent farmers said that their immediate family need has been the most important factor deciding the time of sale which is, generally, immediately after the harvest more particularly in case of Rabi crop due to the general family needs like annual purchases of provision - goods, seasonal purchase of clothes, and special purchases relating to marriage or any other ceremonies. Ten per cent of the farmers also had their opinion relating to competitive market rates, lack of storage facilities at home, and family indebtedness, etc. about deciding the time for sale of their produce.

Some suggestions have also been given for betterment of the market functioning to improve the conditions like cattle shed, night stay, and parking etc.

A good number of farmers — 20 per cent — also disclosed that at the gate of the yard some mafia traders were also working strongly. They threatened the farmers to bring their produce to particular grain markets and/or traders, otherwise they would have to face the consequences.

XII. Suggestions

The agricultural marketing practices have considerably improved as compared with the past. Now the farmer is getting fairdeal and better prices against the village merchant as also several facilities are available to them at the market site under regulation.

Farmers opined about the functioning of the market that they are satisfied — to some extent. However, some farmers viewed that the functioning is not satisfactory as there used to be no true

competition in the bidding. In their view, there is some understanding between the traders and commission agents and hence they (the farmers) do not get the maximum possible price of the produce. The traders also may have an understanding amongst themselves to share the volumes of commodities as per there requirements. This sort of understanding reaches in advance and hence the bidding process seems to be a formality only. Since the traders and the commission agents belong to the same occupation, they too have some sort of understanding reached in advance against the farmer's produce. They also have their general meetings at the market as also outside the market. Thus, due to their personal terms, feelings and relations, the commission agents indirectly favour the traders but they pose to be favouring the farmers. The bidding, therefore, becomes a meaningless exercise.

As far as eradication of such practices is concerned, the farmer-producer-seller says that the supervision/inspection in the true sense of the word be done and that strict enforcement of rules and regulation be observed by the market committees. The market committee must practically help the farmers and check if any traders are trying to cheat them. The attitude of the market committee should not be indifferent towards farmers and they should implement all the rules and regulations strictly followed by the surprise checks. Thus, they should take active interest in making the system helpful to the farmers.

Some farmers also express that for want of good number of traders for bidding, government should be an ideal purchaser of the farmer's produce. It has also been observed that some unauthorised labour also entered the market and in process of their work they did some cheating too. It has also been observed that generally the payments are made to the farmer after sale, yet the attitude of the commission agents always have some favour to the traders rather

than to the farmers. Such happenings should be carefully watched and checked.

The market committee and the government have provided the bye-laws insisting on payment to the farmer on the same day but in many cases, it has been observed that it is not the case. The comission agents make advance payments to the farmers at the time of their (farmers') urgent needs hence, generally, the commission agents also have the tendency of undue profit making rather than just rendering a service to the farmer as is generally posed by them. It seems that the trade is controlled by the commission agents and the traders rather than by the rules and the regulations. Sometimes, a farmer has to visit the market to meet the commission agent only to collect his payment as it is not done immediately after sale every time.

By and large, the farmers are of the view that there is no alternative to regulated marketing and such markets should continue but their functioning should be made more beneficial to the farmers in practice — although there is almost everything in the favour on paper — in black and white. The drawbacks/problems be removed, and the regulation is needed in practice. There should be no political interventions as also no mafia functioning or parallel (unregulated) trading of agricultural produce.

10.5.3 THE TRADERS — THE PURCHASERS

As has already been mentioned, one survey schedule was prepared for traders' responses too. Thus, these responses have also been recorded. Various interesting features have come up after analysing the records. Some of these are given below :

I. Place of Origin

The nearby area includes some important localities/villages like Madiaon, Daliganj, and Khadra. The Khadra locality situated on the same road towards Lucknow is only about 3 km, while Daliganj is also about 2 1/2 km. Madiaon is also on the same road and it is located within 4 km from the mandi. There are 40 per cent traders who came from from Khadra, while 30 per cent from Daliganj locality. Dobagga contributed to 10 per cent while others, not more than 5 per cent each. This clearly shows that nearly 75 percent of the traders reach the market yard from within 5 km distance only.

II. Social Structure

The investigations about social structure has brought out interesting results : while the sellers were mostly from the hindu backward castes, the purchasers are mostly from the hindu upper castes. Against, the 40 per cent sellers from the backward castes, there were as high as 60 per cent purchasers from the upper castes. The most of the upper castes people included Brahmins followed by Vaishys. There were only 25 percent purchasers who came from the backward class community. The Muslim community also contributed to the extent of 10 per cent while the scheduled castes just 5 per cent.

III. Education

When the investigation was done about the educational standard of the traders, it was observed that there were absolutely no traders with higher education or with any university degree. While amongst the sellers, there was an existence of such highly education people. It has already been mentioned that this was particularly because of the unemployment and poverty conditions that the persons with higher education entered the farming occupation. It must be noted

here that the highly educated people had absolutely no education or training related to agriculture, rather, it was only the non-agricultural, area which they had studied. It was also, specifically, noted that this group of purchasers was all literate while there were some illiterate persons also in the selling unit — i.e. the farmers.

There is a very striking fact that as against the 44 per cent sellers with education upto eighth standard, there were 45 per cent purchasers also with the same educational standard. However, against the 48 per cent sellers with high school/intermediate education, there were 55 per cent purchasers with such an educational standard in the market.

This also clearly shows that the persons who received higher education are neither taking active part in selling nor in the purchasing as farmers or traders respectively. Only the people with school education have entered this area. This is also indicative of white collar jobs preferred by the people with education beyond schooling.

IV. Road Linkages and Mode of Transport

The traders, observations show, has collected at the mandi place/yard from the nearby area. All the traders had metalled link roads and they either hired tempo or rickshaw or came by their own vehicle. It was noted that 40 per cent of the traders had their own vehicle while another 40 percent came by rickshaw. The rest 20 per cent reached the yard by tempo.

This also makes it clear that the traders had collected from a near by area only. When investigated, it was observed that 35 per cent of the traders came from within 3 km distance only while another 35 per cent traders had come from a distance more than 5 km, the most of the such traders collected from within 10 km, distance from

the mandi. However, only 10 per cent of the total traders actually travelled a distance more than 10 km but within 20 km. There were 30 percent traders who travelled a distance between 2 and 5 km only.

V. Yard Visits

A very striking feature has come up about the visits by traders to the market yard. As many as 95 per cent of the traders visited the yard regularly (only 5 per cent traders who were comparatively from distant places did not come to the yard regularly. This is true with both the seasons — Rabi, and Kharif.

There were 40 percent traders who made upto 10 visits during the Rabi season. Thirty -five per cent of the traders visited the yard for more than 15 times during this season while 25 per cent of the purchasers paid 10 - 15 visits to the market yard during the Rabi season.

During the Kharif season as high as 50 per cent of the traders visited the market from more than 15 times. This is quite a striking feature against the Rabi season. Another striking feature is that 25 per cent traders had upto 10 visits while another 25 per cent traders had 10 - 15 visits to the market during the said period. Thus, as against the Rabi season, the yard visits by the traders during the Kharif season were quite noteworthy.

VI. Market Fee

Every trader has to get himself enrolled with the mandi, after paying a certain fee, he becomes a bonafide trader-purchaser within the mandi yard. It has already been mentioned that during the present days the license fee of traders is Rs. 250 per annum although earlier, it used to be Rs. 50 per annum for the commission agents

and Rs. 100 for the traders. The traders who have a lot of business with the market have to pay larger amount as the purchasers pay the fee on the amount transacted. At present, the rate of fee paid on this amount is 2.5 per cent out of which 2 per cent is the mandi fee while 0.5 per cent is the development tax which has been implemented from 15.8.1998. Formerly, the mandi tax used to be 1.5 per cent instead of 2 per cent at present. There were 40 per cent traders who paid Rs. 500 to 1000 as fees for their daily business with the mandi. However, those who paid upto Rs. 500 as fee and also those who paid more than Rs. 1000 as fee had the same percentage, 30 per cent each. It has been noted that the Daliganj traders pay large amount of fees to the mandi due to their regular multiple visits. Some traders paid even upto Rs. 3000 while many upto Rs. 2000 while so many between Rs. 1000 and Rs. 2000. It is also important to note that mostly the traders belonging to Bania caste (Gupta etc.) make regular as also high number of visits during both the seasons.

VII. Commodities

As per the availability of crops, the purchasers, make their business. During the Rabi season, while main crops are wheat, barley, gram, arhar, oilseeds (mustard, rye etc.), during the Kharif season the major crops are paddy, rice, moong, urd, masoor, maize, and potato etc. Paddy, rice, and wheat are the crops which have business in large quantities. Many of the traders purchase these crops only.

It is also important to note that the vegetables, and the seasonal fruits are also brought and sold in this market. Amongst the fruits, the major ones are mango, apple, grapes, bannana, lichi, coconut etc. Banana is the one which is demanded most. The largest number of fruit purchasers are for this item. Of the total fruit purchasers, 25 per cent come to this mandi for bananas fruit only.

Grapes and mango come next, 15 per cent each. Apple purchasers have the third position amongst the fruit purchasers in this market. Their percentage is 10. Other fruits are purchased by traders in smaller numbers.

VIII. Suggestions

When contacted, the traders particularly the commission agents expressed that the payments are made to the sellers, generally, immediately after the sale but in some cases, the part payments are also made. During the peak season, the payments are, generally, delayed due to heavy business but delays are not taken seriously by the farmers. The commission agents want their commission rates increased as their expanses have gone up on their establishments.

11. PROBLEMS AND SUGGESTIONS

11.1 OBJECTIVE

Generally, the balanced development of a region is defied by the disparities in the nature of markets within a region due to various existing conditions as also due to those growing with the passage of time. In case of markets, although the problem has been tackled especially through the regulation (Dixit, 1984, pp. 162-177), yet the concerted efforts are still far behind the expectations. The present piece of research is conceived as a major step towards reducing these intra-regional disparities. The objective of this effort is two fold : to analyse the major problems experienced in the case one in hand, as also to present suggestions to the solution of the same.

11.2 PROBLEMS

Although all the RAMs are the contrived markets and that these have been established by the government only, taking into consideration the existing conditions of the various districts of the state, the intensive study of the preceding perspectives of the RAMs of U.P., evidently poses that there do exist some anomalies/imbalances in the distribution of RAMs in the state.

11.2.1 DISTRIBUTION GAPS

I. Gaps in General Distribution of RAMs

From the perspectives of spatial distribution of RAMs it has been observed that large variations do occur especially with regard to areal coverage/population/the number of inhabited villages in the study region. A glance on the map of the state with the distribution of RAM-nodes clearly points out the imbalance amongst the 63

districts distributed in various sub-regions like the hill region/the west U.P. region/the central U.P. region/ the Bundelkhand region.

The general numerical distribution of RAMs in the 63 districts of U.P. shows an anomaly. The number of RAMs in these administrative units varies from 1 to 11. There are as many as 10 districts — Uttarkashi, Tehri Garhwal, Pauri Garhwal, Chamoli, Pithoragarh, Almora, Kanpur Nagar, Basti, Azamgarh and Pratapgarh — which have just one RAM each while Bullandshahr has as many as 11 RAMs, another district — Nainital, has nine RAMs, some districts like Saharanpur etc. have eight RAMs each while some districts have 7 RAMs each. There are many districts where RAMs are few and few districts where RAMs are very many. These observations in view of statistical measure also show that while Nainital, and Bullandshahr have $\overline{X} + 3\sigma$ RAMs, there are as many as 37 districts which have $\overline{X} - 1\sigma$ RAMs,

In terms of distribution of RAMs in the areal context, it has been observed that the number of RAMs per 100 km^2 in the 63 districts of U.P. varies from 0.01 to 0.24. All these cases show that there are anomalies in the distribution of RAMs in the state — few areas have many markets while many areas have few markets. The observations in terms of statistical measure show that while there are 3 districts with $\overline{X} + 3\sigma$ RAMs, as many as 10 districts are there with only $\overline{X} - 2\sigma$ RAMs.

Likewise, the districution of RAMs in population context also shows that the number of RAMs per 10,000 persons varies from 0.001 to 0.05. in terms of statistical measure, these figures vary from $\overline{X} + 3\sigma$ to $\overline{X} - 2\sigma$.

Similarly, in terms of the number of inhabited villages, there are 0.02 RAMs to 0.89 RAMs per 100 inhabited villages in the state.

These values in statistical measure come to X + 3σ in 5 district to X-3σ in 7 districts.

II. Gaps in Hierarchical Organisation of RAMs

The 262 RAMs of the state have been observed to have three clear tiers of hierarchical organisation : The first order RAMs, the second order RAMs, and the third order RAMs. The number of RAMs in these orders are 30, 96, and 136 respectively. The imbalance/disparity in the number of these RAMs has also taken place at the regional, and the district levels.

In the 63 districts of the state, there are only 30 RAMs of the first order meaning thereby that there is a clear absence of even one top class RAM in about half of the area of the state. There are 14 administrative divisions in the state. Thus, on an average there are two first order RAMs each in various divisions.

Further, in case of the second order RAMs, there is one administrative division, Garhwal, which has just one such RAM, Kumaon, Azamgarh, and Allahabad divisions have three each such RAMs : while Gorakhpur, and Varanasi divisions have 4 such RAMs each. On the other hand, Meerut, and the Jhansi divisions have as many as 12 such RAMS each. The Moradabad division have 11 such RAMs while the Lucknow division has 10 second order RAMs.

As regards, the distribution of third irder RAMs at the division level, it has been observed that the Kumaon division has just 2 third order RAMs while Moradabad has five. As against this, the Meerut division has as many as 22 such RAMs followed by the Agra division with 16 such markets.

At the district level, the anomalies are rather more prominent as is clear from the following.

Twenty-two districts have 1 first order RAM each. One district (Aligarh) has 2 such RAMs, while one district i.e. Nainital has six such RAMs. Thus, 24 districts have 30 first order RAMs against 39 districts which have absolutely no RAMs of this order.

As far as it is concered with the second order RAMs, the 44 districts have 96 such RAMs, amongst these, 15 districts have one such RAM each, another 15 districts have 2 RAMs each of this order, six districts have 3 such RAMs each, 7 districts have 4 RAMs each of this order while one district – Moradabad – has five RAMs of the second order. This makes it clear that there are 19 districts in the state which absolutely have no second order RAMs which is a very striking feature.

As far as it is concerned with the third order RAMs, it has been noted that 22 districts have one third order RAM each, 10 districts have 2 such RAMs each, 8 districts have 3 RAMs each of this order, another 8 districts have four RAMs each of this order, one district has 5 such RAMs, 4 districts have six RAMs, while one district — Bullandshahr — has as many as nine RAMs of the third order. There are, thus, 54 districts in the state with 136 third order RAMs, while 9 districts have absolutely no such RAMs.

It must be pointed out that in the hill region of U.P. (consisting of 8 districts), there is only one district i.e. Dehradun which has all the three orders of the RAMs, further, only one district i.e. Nainital has absolutely no third order RAMs. It is also surprising that Nainital district has the largest number of the first order RAMs in all the 63 districts of the state (no district except Aligarh has even 2 such RAMs, while as many as 39 districts have absolutely no such RAMs. All the districts of the hill region excepting Dehradun, and Nainital districts have only one third order RAM each, meaning thereby that there are absolutely no first and second order RAMs in any of these

districts. Besides, Kanpur Nagar, Basti, Azamgarh, and Pratapgarh districts also have just one RAM each and hence, only one order RAM each is found in all of these districts while 2 orders of the RAMs are completely absent. The Kanpur Nagar District has only the first order RAM while Basti, Azamgarh, and Pratapgarh have only the second order RAMs — one each. There are no second order RAMs in Firozabad, Mainpuri, Sitapur, Unnao, Lucknow, Bahraich, Kanpur Nagar, Siddharthnagar, Gorakhpur, Mau, Ballia, Mirzapur, and Lalitpur districts. The Nainital, Varanasi, Sultanpur, Aligarh, and Pilibhit districts have no third order RAMs, although these districts have more than one RAM each.

At a glance, the map of U.P. clearly exhibits that there are imbalances/disparities/anomalies in the locations of these three order RAMs in the state.

Table 11.1 : U.P. : RAMs —Distributional Gaps

I. Basic Statistics

Division	No. of RAMs	Per Regulated Agricultural Market		
		Area (Km²)	Population	Village (No.)
1. Garhwal	8	3761.12	3,72,868.37	1019.62
2. Kumaon	11	1912.27	2,67,365.54	582.63
3. Meerut	38	550.26	4,02,046.42	147.65
4. Moradabad	17	758.52	4,75,335.11	335.50
5. Bareilly	18	964.55	4,71,591.77	387.27
6. Agra	29	773.24	4,50,791.65	227.89
7. Kanpur	19	777.68	4,80,990.78	257.94
8. Lucknow	28	1110.85	5,56,761.89	362.96
9. Faizabad	21	1313.28	6,80,829.28	566.66
10. Gorakhpur	14	1352.21	9,87,772.21	1041.28
11. Azamgarh	10	1296.60	10,07,657.60	1025.40
12. Allahabad	11	1375.45	8,21,023.09	642.90
13. Varanasi	11	1798.09	9,09,943.54	850.27
14. Jhansi	27	1089.55	2,49,249.92	167.44
U.P	262	1123.70	5,23,962.93	430.54

No. of RAMS per division = 18.71 in U.P.

II. Division Position Against U.P. Average

No. of RAMs (18.71)	Area (Km²) (1123)	Populations (5.23 lakh)	No. of Village (430)
1. Garhwal(8)	Garhwal(3761)	Azamgarh(10.07)	Gorakhpur(10.41)
2. Azamgarh(10)	Kumaon(1912)	Gorakhpur(9.87)	Azamgarh(1025)
3. Kumaon(11)	Varanasi(1798)	Varanasi(9.09)	Garhwal(1019)
4. Varanasi(11)	Allahabad(1375)	Allahabad(8.21)	Varanasi(850)
5. Allahabad(11)	Gorakhpur(1352)	Faizabad(6.80)	Allahabad(642)
6. Gorakhpur(14)	Faizabad(1313)	Lucknow(5.46)	Kumaon(582)

Table 11.1 particularly its secondary showing relevant statistics against U.P. average is clearly pointing out that the Garhwal division is first in two cases : Against 18.71 RAMs per division in U.P., it has only 8 RAMs, while against 1123 km^2 area per RAM in U.P., it has as much as 3761 km^2. Further, this division has the third place in case of number of villages per RAM as there are as many as 1019 villages against only 430 for U.P. In view of these facts, it seems reasonable that this division should have more RAMs.

That the Garhwal division is first in one case and second in two cases : As against 5.23 lakh population per RAM in U.P., it has as high as 10.07 lakh the same. Also it has·only 10 RAMs against 18.71 RAMS on an average for the state. Further, it has as many as 1025 villages per RAM against only 430 (villages per RAM) in the state.

That the Gorakhpur division is first in one case and second in another one : As against 5.23 lakh population per RAM in U.P., it has as high as 9.87 lakh (per RAM).

That the Varanasi division is third in two cases, and fourth in other two cases : As against 1123 km^2 area per RAM in U.P., it has as much as 1798 km^2 area per RAMs; Also, as against only 5.23 lakh population per RAM in U.P., it has as many as 9.09 lakh people per RAM. Further, as against 18.71 RAMs on an average per division in U.P., it has only 11 RAMs; while as against 430 villages per RAM in U.P., it has as many as 850 villages per RAM.

That the Allahabad division has the fourth rank in two cases and fifth in other two cases : As against 1123 km^2 area per RAM in U.P., it has 1375 km^2 area per RAM while against only 5.23 lakh population per RAM in U.P., it has as high as 8.21 lakh population per RAM. Besides, as against 18.71 RAMs per division in U.P., it

has only 11; while as against 430 villages per RAM in U.P., it has 642 villages.

That the Faizabad division has the fifth place in one case while sixth in another case : As against 5.23 lakh people per RAM in U.P., it has 6.80 lakh population per RAM; while against 1123 km^2 area per RAM in U.P., it has 1313 km^2 per RAM.

As there are 14 divisions in the state, there could have been many RAMs in terms of each of the cases — the number of RAMs, area per RAM, population per RAM, and the number of villages per RAM, but only the first six ranks have been taken up at the moment. All these figures clearly show that there is a deficiency of number of RAMs particularly in the divisions of Garhwal, Azamgarh, Gorakhpur, Varanasi, Allahabad, and Faizabad. In view of this, it is suggested that there should be more RAMs in each of the said divisions. The proposals for the actual number of additional RAMs have been put forth in the second stage — the district level. The district level relevant statistical information is presented through Table 11.2. The table clearly shows the districts of the division (which have been identified for additional RAMs), the number of RAMs including various orders, both the marketed surplus as also the marketable surplus of these districts as well as the road-length in the district per 100 km^2 area.

Table 11.2 : U.P. : RAMs —Hierarchical Gaps

Division/ District	RA Ms	RAM-Orders			Surplus ('000 metric tonnes)		Road Length (km/100 km^2)
		III	II	I	Marketed	Marketable	
Garhwal	8	6	1	1	7.20	52.45	
1. Uttarkashi	1	1			00	7.00	16.18
2. Dehradun	4	2	1	1	6.32	13.75	46.60
3. Tehri Garhwal	1	1				10.70	32.59
4. Pauri Garhwal	1	1			0.88	14.00	40.91
5. Chamoli	1	1				7.00	15.00
Azamgarh	10	6	3	1	29.70	1001.60	
6. Jaunpur	3	1	2		9.24	286.39	67.36
7. Azamgarh	1		1		3.17	358.81	55.71
8. Mau	2	2			2.04	148.06	56.33
9. Ballia	4	3		1	15.25	208.34	71.42
Gorakhpur	14	9	4	1	415.27	1761.22	
10. Basti	1		1		66.64	407.21	52.98
11. Siddharthna gar	4	4			104.64	312.59	30.44
12. Gorakhpur	3	2		1	40.63	240.70	33.78
13. Maharajganj	4	2	2		96.37	417.69	33.78
14. Deoria	2	1	1		6.99	382.53	66.89
Varanasi	11	6	4	1	63.27	259.93	
15. Varansi	3		2	1	20.70	261.27	72.80
16. Ghazipur	4	3	1		16.23	265.34	67.81
17. Mirzapur	2	2			8.96	243.11	34.96
18. Sonbhadra	2	1	1		17.38	90.21	12.96
Allahabad	11	7	3	1	152.84	728.03	-
19. Fatehpur	5	4	1		70.07	254.73	36.84
20. Pratapgarh	1		1		27.22	183.00	66.88
21. Allahabad	5	3	1	1	55.55	290.30	45.68
Faizabad	21	13	7	1	685.27	1904.81	
22. Bahraich	6	5		1	167.97	383.83	27.61
23. Barabanki	3	1	2		123.69	371.81	45.09
24. Gonda	7	6	1		183.57	490.05	35.01
25. Faizabad	3	1	2		119.15	414.48	48.57
26. Sultanpur	2		2		91.19	244.64	56.15

11.3 SUGGESTIONS

11.3.1 FILLING THE GAPS

In view of the gaps identified, it seems proper to make suggestions for filling the said gaps to some extent, atleast if not in entirity. It would also be meaningful to make efforts to fill up the distribution gaps of RAMs at the division level, and than to proceed to fill up the hierarchical gaps, to some extent, at the district level. In view of this, the proposals at this moment are made for the state at the division/district level.

Through the indepth study of the data, the districts alongwith the number of RAMs in various orders have been derived out of the same as follows : In all 16 new locations/ markets have been suggested — Garhwal division (1 in Pauri Garhwal district), Faizabad division (1 in Sultanpur district), Gorakhpur division (3 one each in Basti, Siddharthnagar, and Deoria districts, Azamgarh division (6 = 3 in Azamgarh district, 2 in Mau district, and 1 in Ballia district), Allahabad division (2 in Pratapgarh district), Varanasi division (3 = 2 in Varanasi district, and 1 in Mirzapur district). Figure 36 shows these locations.

I. Garhwal Division

The Garhwal division needs some more RAMs especially in view of the less number of existing RAMs, as also in view of its large area. The Uttarkashi, Tehri Garhwal, and Chamoli may be excluded at the moment due to their locations as also due to comparatively less population. In case of Dehradun, it may be viewed that it has already the sufficient number of RAMs thus, in view of population as also in view of the largest number of villages in the district (amongst all the five districts of the division) as well as more particularly from

UTTAR PRADESH
REGULATED AGRICULTURAL MARKETS - 1996
FILLING THE GAPS

RECOMMENDATIONS

■ DOGADDA ....

Fig. 36
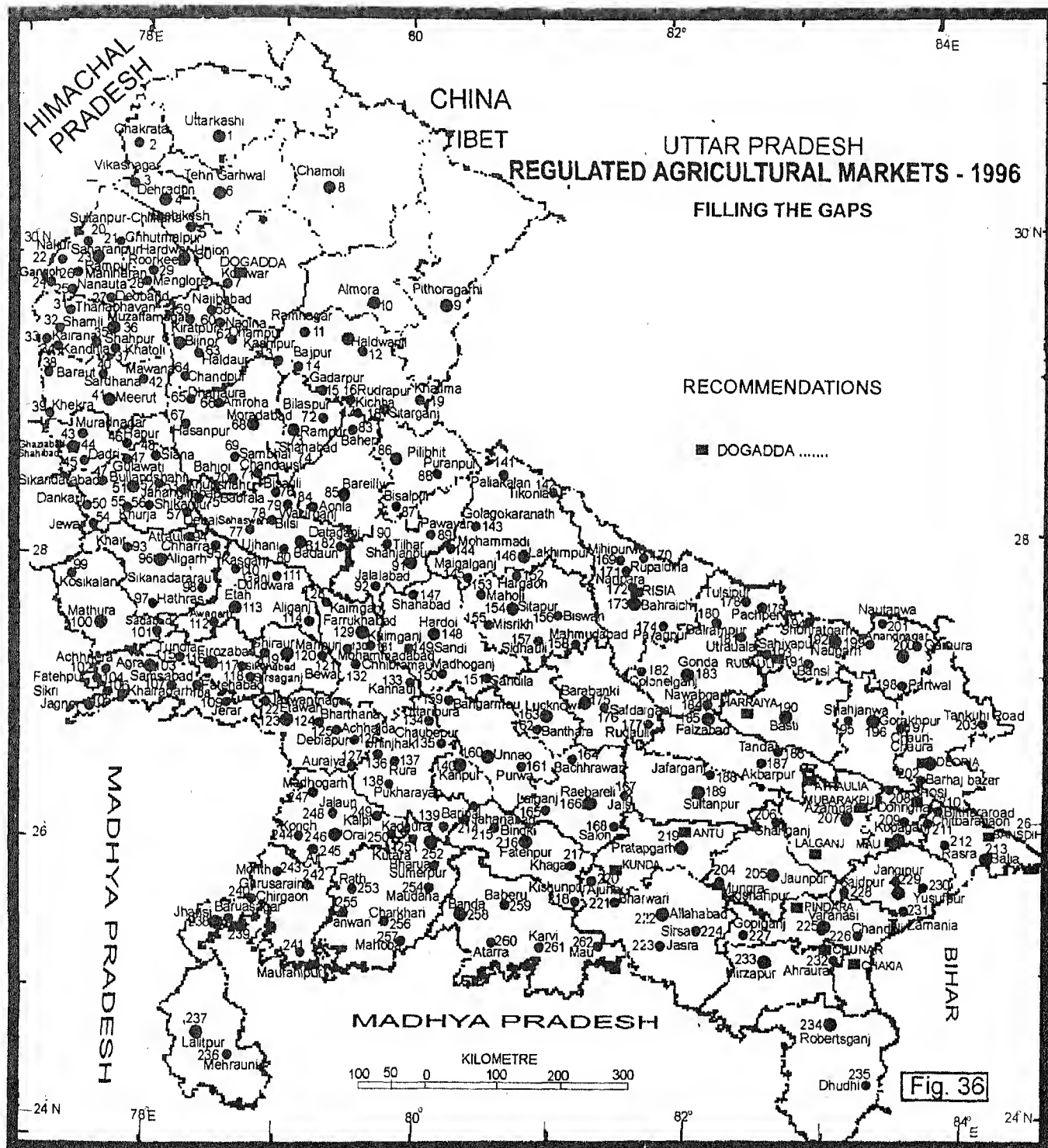
the standpoint of the surface area, the additional RAMs of the division may be added in Pauri Garhwal district. The marketed surplus of the division is only 7.20 thousand metric tonnes while its marketable surplus is 52.45 thousand metric tonnes.

At present the Pauri Garhwal district has just one RAM, Kotdwar, which is a third order RAM. There is one subsidiary market, Dogada, located on the main road in this very district. This market-settlement has an urban status of a municipal board with 2444 population. It is about 7 kms. From Kotdwar towards inner part of the district. This sub-yard may be upgraded into a main market — one of the third order only at the moment. (Besides, there are two more options — Pauri, and Srinagar. While the first one is located on a ridge, the other one is located in a valley. Both of these have the status of muncipal board. Pauri Garhwal has 20,397 people as against Srinagar with 18,791) . The marketable surplus of the district is 14000 metric tonnes while at present the marketed surplus of the district is just 880 m tonnes. Thus, there does exist some scope for marketing of some agricultural produce in the district. However, the road length per 100 km^2 area in the district is 40.91 km which is only a little bit less than that in Dehradun district, but it is far above than that in Chamoli, Uttarkashi, and even in Tehri Garhwal. This addition would make the number of RAMs in the district as 2 while those of 9 (1 + 1 + 7 in the first, second and third order respectively) in the division. As against the averages of 4, and 18.71 for a district and a division respectively in the state.

II. Azamgarh Division

In the case of the Azamgarh division, there are 10 RAMs in Jaunpur (3) : 0+ 2+ 1; Azamgarh (1) : 0 + 1 +0; Mau (2): 0 + 0 + 2; and Ballia (4) : 1 + 0+ 3 = 1 + 3 + 6 = 10. As per the various order there are 1

+ 3 + 6 RAM in the first, second, and third order respectively. The marketed surplus of the division is only 29.70 thousand metric tonnes against its marketable surplus of 1001.60 thousand metric tonnes.

Azamgarh district, thus has just one RAM, and that one of the second order only. In view of the district population, as also from the standpoint of area, and the number of villages, this district has a great need of additional RAM(s). This district has only 3.17 thousand metric tonnes of marketed surplus against 358.81 thousand metric tonnes of the marketable surplus. Besides, the road –length also is 55.71 km per 100 km^2 area in the district. These facts strongly support for 3 additional RAMs. In the district, there are 5 existing sub-yards — Maharajganj, Naria, Atraulia, Lalganj, and Mubarakpur. Amongst these sub-markets, Mubarakpur urban agglomeration with population of 62,733 and Atraulia town area with a population of 9899 can cover the eastern and western areas of the district in case these are upgraded into full/main market status. Besides, the third addition, Lalganj, although only of a village status would cover the southern part of the district. Thus, with three additions, there would be four (3 third order and one second order) RAMs in the districts .

In Mau district, there are just 2 third order RAMs. In view of its marketed surplus, 2.04 thousand metric tonnes, marketable surplus (148.06 metric tonnes), road length 56.33 km per 100 km^2, and the existing 4 sub-yards — Gontha, Badhalganj (under Dohri ghat main market), Maunath Bhanjan, and Ghosi (under Kopaganj market), Maunathbhanjan municipal board status city with a population of 1,36,697 and Ghosi town area with a population of 28,113 may be upgraded to second and third order full mandi status respectively. These two are the biggest settlements of the district. However,

Maunathbhanjan which has a population of over 1 lakh — the highest in the district — may very well be developed with a new market site, and modern facilities to take up the status of the second order RAM. Thus, with two additions including one of the second order, there would be four (3 third order and 1 second order) RAMs in the district.

In Ballia district there are four (3 third order and one first order) RAMs. In view of its marketed surplus (15.25 thousand metric tonnes), marketable surplus (208.34 thousand metric tonnes), road length 71.42 km (per 100 km^2 area), and the existing six sub-yards — Sikandarpur NA (16,391) under Bilthara road main market, Bansdih TA (17,175), Rewti NA (17,973), Maniyar TA (14743), Raniganj, and Sahswar (under Ballia main market), Bansidih sub-yard may be upgraded to the status of a full main yard while the Bilthara road which has the C.I. value of 50.00 could be upgraded to the second order RAM. Thus, with one addition, and one change in status, there would be five (3 third order + 1 second order + 1 first order) RAMs in the district.

In the division, with six additions the break-ups of the RAM in the first, second and third orders would be as follows : Jaunpur, 0 + 2 + 1; Azamgarh, 0 + 1 + 3; Mau, 0 + 1 + 3; and Ballia, 1 + 1 + 3 = 1 + 5 + 10 = 16 as against 18.71; the average number of RAMs in a division.

III. Gorakhpur Division

In the Gorakhpur division there are five districts. The first, second, and the third order RAMs in these districts are : Basti (1) : 0 + 1 + 0 ; Siddharthnagar (4) : 0 + 0 + 4; Gorakhpur (3) : 1 + 0 + 2; Maharajganj (4) : 0 + 2 + 2; and Deoria (2): 0 + 1 + 1 = 1 + 4 + 9 = 12 RAMs. The marketed surplus of the division is only 415.27

thousand metric tonnes as against its marketable surplus of 1761.22 thousand metric tonnes.

Basti district has only one i.e. second order RAM while its marketed surplus is 66.64 thousand metric tonnes against its marketable surplus of 407.21 thousand metric tonnes. The road length in the district per 100 km² area stands at 52.98 km, and there are subsidiary markets — Makhania bazar, and Babhnan. Harraiya TA has a population of 6737 but has a good location in the district in terms of roadways. A new ordinary main market may be established in the beginning as a third order RAM. Thus, in the district with one addition, there would be 2 (1 second order + 1 third order) RAMs.

In Siddharthnagar, there are four third order RAMs. It has 104.64 thousand metric tonnes marketed surplus against 312.59 thousand metric tonnes of marketable surplus. The road length, however, is only 30 km per 100 km² area in the district. There are six sub-yards — Kandua/Rudauli (under Bansi main market), Uska Bazar (under Naugarh, main market), Biksehar Bazar, Hallaur, Itwa, (under Sahiapur main market) and Badni (under Shohratgarh main market). However, the Rudauli sub-yard may be upgraded into a full main market, while Bansi may be added with a new sub-yard on modern lines with all the basic facilities as also the modern facilities like grading unit and/or Kisan Bazar which would raise the status of this market. The picture of the district with one addition and with one change in status would be as 1 second order + 4 third order = 5 RAMs.

In Deoria district, there are 2 RAMs — one RAM each in second and third order. The district's marketed surplus is 6.99 metric tonnes, while its marketable surplus is 382.53 thousand metric tonnes. The road length of the district is 66.89 km per 100 km² area. This district has seven sub-yards — Dudhari (under Tamkuhi Bazar main

market), Pandari Bazar, Deoria, Tarkulia (with new site), Bangra, Rudrapur, and Salempur (under Barhaj Bazar main market). The Deoria subyard may be upgraded into a full Mandi i.e. main Mandi. Thus, with one addition, there would be two-third order, and one second order (Table 11.3) RAMs in the district.

The final picture of the division with three additions would be of the first, second, and third order RAMs as : Basti (2) : 0 + 1 + 1; Siddharthnagar (5) : 0 + 1 + 4 ; Gorakhpur (3) : 1 + 0 + 2; Maharajganj (4) : 0 + 2+ 2 ; and Deoria (3) : 0 + 1 + 2 = 1 + 5 + 11 = 17 RAMs as against 18.71 average per division in the state.

IV. Varanasi Division

In Varanasi division, there are four districts — Varanasi, Ghazipur, Mirzapur, and Sonbhadra. The number of RAMs in the first, second, and third orders in these districts are : 1 + 2 + 0 in Varanasi, 0 + 1+ 3 in Ghazipur, 0 + 0 + 2 in Mirzapur, and 0 + 1 + 1 in Sonbhadhra = 1 + 4 + 6 = 11 in this division. The marketed surplus of the division is only 63.27 '000 metric tonnes against its marketable surplus of 859.93 '000 metric tonnes.

The Varanasi district has only 20.70 thousand metric tonnes of marketed surplus against its marketable surplus of 261.27 thousand metric tonnes. The road length per 100 km^2 area in the district is 72.80 km . There are 11 sub-yards in the district – Pindara, Mughalsarai, Udalpura, Jamua, and Danganj (under Varanasi main market), Bhadohi, Suriyavan (under Gopiganj main market), Chakia with new market site, Sakaldiha, Saiyadraja, Baburi (under Chandauli main market).

Chakia located in the southern part with a town area status and with a population of 10,587 may be upgraded into a main market, while Pindara located in northern part has only a village status but it may

cover the northern part of the district if upgraded into a main market. Thus, in this district 2 third order RAMs may be added to cover the entire district reasonably. There will still be as many as nine sub-yards in the district. The RAMs in the first, second, and third order would be 2 + 2 + 1 = 5 after addition of two RAMs.

Mirzapur district has only 2 RAMs, both in third order. The marketed surplus of the district is 8.96 thousand metric tonnes while the marketable surplus 243.11 thousand metric tonnes. The average road length in the district per 100 km^2 area is 34.96 km. There is however, just one subyard, Chunar, under the Ahraura main market (with MB status). Chunar has a population of 27,778 with its urban status as a municipal board. The Mirzapur-cum-Vindhayachal municipal board has a population of 1,69,336. The Mirzapur main market may be upgraded with a new mandi site and modern facilities like grading machine, and the Kisan Bazar. Thus, it may be upgraded into a second order RAM while a third order RAM may be established by upgrading Chunar into a main market yard. With these — one addition and one change in status — there would be one second order RAM and two-third order RAMs totalling to 3 RAMs in the district.

Thus, with these three additions and one change in status there would be the RAMs as : 1 + 2 + 2 (in Varanasi); 0 + 1 + 3 (in Ghazipur), 0 + 1 + 2 (in Mirzapur), and 0 + 1 + 1 (in Sonbhadra) = 1 + 5 + 8 =14 RAMs in the division. Thus, there is an absolute addition of three RAMs. The number of RAMs in this division would be 14 as against 18.71, the average number of RAMs per division in the state.

V. Allahabad Division

The Allahabad division has three districts in which the RAMs in the first, second, and third order run as 0 + 1 + 4 in Fatehput, 0 + 1 + 0 in Pratapgarh, and 1 + 1 + 3 in Allahabad = 1 + 3 + 7 RAMs. The marketed surplus of the division is 152.84 thousand metric tonnes as against its marketable surplus of 728.03 thousand metric tonnes.

In Pratapgarh district, there is just one market which is of the second order. There are no other orders of RAMs in this district at all. The marketed surplus of the district is 27.22 thousand as against its marketable surplus of 183 metric tonnes . The average road length per 100 km^2 area in the district is 66.88 km. However, there are five subyards under the Pratapgarh main market namely : Kalakankar, Antu-Ramganj, Ramganj-Kaithola, Kunda, and Majhalgaon. The Antu sub-yard has its urban status of a town area with 6, 346 population while Kunda also has a town area status with a population of 16,491. These sub-yards may be given the status of full mandi yards which would cover the entire district with three RAMs as against one at present (thus with two additions only).

The Allahabad division with two more RAMs would have the first, second, and the third order RAMs as 0 + 1 + 4 in Fatehpur, 0 + 1 +2 in Pratapgarh, and 1 + 1 + 3 in Allahabad = 1 + 3 + 9 = 13 as against 18.71, the average of number of RAMs per division in the state.

VI. Faizabad Division

In the Faizabad division, there are 21 RAMs in the first, second, and third orders in various districts as : 1 + 0 + 5 in Bahraich, 0 + 2 + 1 in Barabanki, 0 + 1 + 6 in Gonda, 0 + 2 + 1 in Faizabad, and 0 + 2 + 0 in Sultanpur. Thus, there are no second order RAM in Bahraich district, while it has five third order and one first order RAMs.

Likewise, in Sultanpur district also, there are only 2 RAMs both of the second order, thus there are no RAMs in the first and third order district. The Faizabad division has 685.27 thousand metric tonnes of marketed surplus against 1904.81 thousand metric tonnes of marketable surplus.

In Bahraich district the marketed surplus is 167.97 thousand metric against 383.83 thousand metric tonnes of marketable surplus. The Mihipurwa, Nanpara, and Payagpur main markets have no sub-yards while Rupaidiha, Risia, and Bahraich have one each — Chaugadwa (in Rupaidiha), Matera (in Risia), and Chilbaria (in Bahraich). However, there are no new yards in four of the main markets i.e. excepting Nanpara, and Bahraich (first-order) main markets. Nanpara also has a urban status of a municipal board of a population of 34,409. Also, Risia has an urban status of a town area with a population of 8,814. These two RAMs may be upgraded to achieve the second order status through addition of modern facilities at both the mandi sites as also the construction of a new mandi yards at the Risia market. Thus, with a change in the status of 2 RAMs, the picture would emerge as 1 + 2 + 3 in the first, second, and third order of RAMs respectively in the districts.

The Sultanpur district, of course, needs at least one additional RAM as the district at present has only 2 RAMs, both of second order. The marketed surplus of the district is 91.19 thousand metric tonnes. Against the marketable surplus of 244.64 metric tonnes. The average road-length per 100 km^2 area is 56.15 km. The district has Jafarganj, and Sultanpur main yards while the Amethi sub-yard (with new site) is attached with the Sultanpur main market. The Amethi sub-yard may be provided with modern facilities like the grading machine, and the Kisan Bazar. It may be upgraded into a full main market. Thus, there would be 2 second order and 1 third order RAMs in the district.

The panorama of RAMs in various orders in various districts would be as : 1 + 2 + 3, Bahraich, 0 +2 + 1 in Barabanki, 0 + 1 + 6 in Gonda, 0 + 2 + 1 in Faizabad, and 0 + 2 + 1 in Sultanpur = 1 + 9 + 12 = 22 RAMs. The division, thus, would have 22 RAMs in all.

In view of these additions at the district level and the division level as also in the hierarchical orders, the final tally at the division level emerges as shown in Table 11.3 which can be compared with Table 7.3.

Table 11.3 : Hierarchical Orders of RAMs After Planning

Division	Number of RAMs			
	First Order	Second Order	Third Order	Total
1. Garhwal	1	1	7	9 (one added)
2. Kumaon	6	3	2	11
3. Meerut	4	12	22	38
4. Moradabad	1	12	5	17
5. Bareilly	3	8	7	18
6. Agra	4	9	16	29
7. Kanpur	1	9	9	19
8. Lucknow	3	10	15	28
9. Faizabad	1	9	12	22(one added)
10. Gorakhpur	1	5	11	17 (three added)
11. Azamgarh	1	5	10	16 (six added)
12. Allahabad	1	3	9	13 (two added
13. Varanasi	1	5	8	14 (three added)
14. Jhansi	2	11	13	27
Total	30	102 (six added)	146(ten added)	278(sixteen added)

Thus, it is obvious from the table that the average number of RAMs per division has increased to 19.85 against the original average, 18.71. In view of average number of RAMs in various divisions it

must be noted that there is no need to change completely the whole system, rather, only in bare needs these additions have been made as the additions do demand huge funds too for implementation. The number of RAMs situated in western U.P., central U.P., and the Bundelkhand region have been, rather, satisfactory hence, only the hill, and the eastern U.P. region have been touched — more particularly the eastern U.P.

The Faizabad division, although, had 21 RAMs yet there was a need of a RAM in Sultanpur district, hence, one RAM has been added to this division. The Gorakhpur division had 14, Azamgarh division has 10, Allahabad division has 11, and Varanasi also has 11 RAMs as against 18.71, the average number of RAMs for the state. Hence, on reasonable grounds, as also in view of the minimum possible needs, three RAMs in Gorakhpur, six in Azamgarh, two in Allahabad, and three RAMs in Varanasi have been added to give 17, 16, 13, and 14 RAMs against the original 18.71 average number of RAMs per division in the state. Thus, in all, sixteen RAMs have been added to the list.

However, no additions or changes have been made in the existing situation of the first order RAMs. In place of 96 second order RAMs, there would be 102 (thus, 6 more) RAMs, while as against 136 RAMs in the third order there would be 146 RAMs (thus 10 more) only. It is clear from the above that no large scale changes or additions have been made (for want of huge funds) but minimum possible needs have also been fulfilled through these additions.

12. EPILOGUE

The present write-up presents the summary of the research centered on 'Agricultural Markets of Uttar Pradesh — A Spatial Analysis'. The entire report consists of 12 chapters divided into two major sections : one, General, and two, Spatial analysis of regulated agricultural markets (RAMs) of U.P. The first section is divided into three chapters while the second one comprises nine chapters.

12.1 PROLOGUE

The first chapter has two fold objective : to present the design of the research work, and to present the glimpses of the study region — U.P. The first part of the chapter discusses the perspectives which give rise of the design of the present research which encompasses twelve aspects : title and the statement of the problem, objective of research, rationale of the study, overview of the existing literature, conceptual background, research hypotheses, coverage in research, data collection, maps and diagrams, methodology, contents of the work, and survey schedules. The second part of the chapter includes the various perspectives which throw light on the geographical personality of the study region, U.P. This part consists of location, and area, physical features, climate, soils, population, vegetation, minerals, agriculture, and transportation perspectives of the state.

12.2 DEVELOPMENT OF MARKETING GEOGRAPHY IN INDIA

The objective of the second chapter is to present the development of marketing geography in India in terms of production of sources of literature, and progress of contributions to research in this sub-field of geography.

Marketing geography is a new off-shoot from the trunk of geographical science. William Applebaum is regarded as the chief architect of marketing geography in the United States. During the early 1960s, R. E. Murphy laid great emphasis on the fact that marketing geography had come of age. Credit goes to R. J. Bromley for presenting several lists in the form of review and bibliographies on literature of marketing geography during the 1970s. The International Geographical Union (IGU) Working Group on Market Distribution System/Market Place Exchange Systems came into existence in 1972-73. In 1985, E. Gormsen edited the 15th Newsletter of the Working Group which included a bibliography compiled by Wayne Mckin.

In 1984, the IGU Working Group was terminated after 12 years of working and a new unit, Study Group : Geography of Commercial Activities came into being during the France IGU meet. During the next meet in Australia the Study Group was converted into a full-fledged IGU Commission : Geography of Commercial Activities. In 1996, during the IGU meet in the Netherlands, the Commission's term came to an end and a new study group, Globalization of Retailing, has been formed. This study group is now making preparations for submiting its report in the next IGU meet in the year 2000 at Seoul in South Korea.

In the context of the development of marketing geography in India, M. Shafi, in 1972, presented the first list of the literature available in this new subfield of geography. Afterwards H.M. Saxena (1979), J. Singh (1979), R. S. Dixit, and D.N. Verma (1980, 1988), Jayashanker (1984), and R. S. Dixit (1990), more especially, presented their contributions which gave significant details about the available literature produced on marketing geography in the country. The entire lot of material comprises various forms of literature i.e. the research papers, the research projects, the text

book-projects, and text books, the research books and Journals, and the academic meets.

More than 500 research papers have been traced on various perspectives of markets and marketing in geography such as role, origin, evolution, location, distribution, typology, centrality, hierarchy, goods/commodities, trade area, morphology, and synchronization etc. of market centres. It has been observed that a large number of papers dealt with a few particular topics like distribution while only a few papers dealt with a large number of topics. The transport network, typology morphology, especially, have attracted only a few scholars. And yet, it is obvious that there has been a tremendous increase in the number of studies in the form of research papers, especially during the 1980s, and the 1990s in the country.

Research projects have added a lot in the context of development of marketing geography in India. There are two types of research projects : one, the dissertations which are related to the award of a university degree like M.A., M. Phil, and Ph.D./D.Phil; and the other one, not related to any such awards and these are generally, the post doctoral projects sponsored by the governmental/non-governmental agencies. While more than three-and-a half dozens of the first type of reports have been submitted to various universities in the area of marketing geography in the country; about one-and-a half dozens of the second type of reports have also been completed. In this case, also, tremendous development has taken place during the 1980s and the 1990s.

As far as it is related to the development of marketing geography in form of production of the text-book-project reports and the publication of text books, however, only H. M. Saxena, R. S. Dixit and V. K. Srivastava have made attempts and only one text-book-

project report, and two text books could be seen, these also particularly during the present decade only.

In case of the production of research books, the author has observed that at least two dozens of such works have come out, particularly during the 1980s. It has been noted that marketing geography has been percieved from micro-level study cases to macro-level studies in the country. The case studies of places/ towns/ markets have been presented by A. Sami (1980), and R. S. Dixit (1992); while the country level works have been contributed by Johnson (1965), Wanmali (1983), and Dixit (1990). At the regional/state level, Dixit (1984), Saxena (1992), and Jain (1993) made significant presentations. In addition, one research journal on marketing geography has also been started (from Gorakhpur) although it is too irregular about publications·of its issues.

The academic meets on discussions and sharing of views on the perspectives of marketing geography during various seminars, workshop, conferences at the local, regional, national, and the international level played a great role in the development of market geography in the country as many of the proceedings are published. It has been observed that more than 200 research studies in market geography have been discussed during these meets.

The entire statistics make it crystal clear that during the 1970s, 1980s, and the 1990s, broadly speaking, from every stand point, there has been a considerable development in marketing geography in the country. The geography scholars in the country have shown keen interest in carrying out researches on various perspectives of market geography in India. It is a good sign that the numbers of both the researches and the researchers have been considerably increasing, especially, during the 1980s, and the 1990s. Besides, in

several Indian universities, marketing geography has been included in the programmes for post-graduate studies as a special paper. Also, M. Phil./ D.Phil./ Ph.D. degree scholars are engaged in this area of geography in considerable number in the country. Thus, there are sound bases to understand that, by this time, in India, marketing geography has achieved the status of a branch of its parent discipline, and it can be safely remarked that, basically, the formative stage has been achieved by market geography in India, and with the continued research work, its literature is being enriched constantly. Market geography, thus, is passing through the informative stage (after completing the formative stage), while the conformative and the reformative stages, a matter of constant multi-dimensional work and process, have, rather, still to come.

12.3 MARKET REGULATION AND REGULATED AGRICULTURAL MARKETS (RAMs)

This chapter is centered over the presentation of background of market regulation, market regulation in India, the incoming of RAMs, in U.P., the Mandi Parishad, Mandi Samiti, new sites of the RAMs, facilities provided to the functionaries, commodity coverage, crop arrivals, and income of the RAMs in U.P.

The conditions of marketing of agricultural produce prevailing before the regulation in the country had been too unfair and unfavourable to farmers and rather they favoured the traders/intermediaries and, hence, the real benefit of the marketing of agricultural produce of the farmer went, obviously, not to the producer of the produce, rather to the intermediaries. There were numerous mal-practices in the traditional/conventional agricultural markets/mandies, to mention a few : weighment done by weighmen — the men of traders — used substandard and false weights directly cheating the farmers, deductions from sold produce were made in the name of samples,

impurities, substandard produce, contributions for religious activities etc; 'cover bids' keeping the seller in dark, and disputes, if any, were settled by influential persons (from trader's side only), as also no full payments were done immediately after sale etc. And hence, there was a great need to regulate the entire process of sale-purchase of agricultural produce. This gave rise to market regulation under which the open auction of various salable agricultural produce is done after proper cleaning and grading at the same market. The sale takes place only with the wishes of the farmer. The standard weights are used, and no deductions in the produce are made. Thus, the regulation ensures justice to the farmer.

The first regulated market was established as early as 1886 as per the Hyderabad Residency Order. Likewise, various Acts came into being since 1917 till 1935. In 1935, every province (state) of the country came to have Agricultural Marketing Department. Before independence, about 122 markets were regulated while till the 1980s, more than 6000 markets came under regulation in the country.

As regard the market regulation in U.P., it is significant to mention that there has been a permanent post of an Assistant Marketing Officer at the State Headquarters since 1937 only. Under the Agricultural Produce — Classification (and Identification) Act, 1937, the agricultural produce were classified and standardized. The Rajya Krishi Utpadan Mandi Adhiniyam, (UPRKUMA) 1964 provides various measures to regulate the markets in U.P. to achieve various objectives like : to reduce the multiple trade charges, levies and extractions from the producer-seller produce, to provide for the verification of accurate weights and scales, and see that the producer-seller is not denied his legitimate due, to provide amenities to produce-seller in the market, to arrange for the better storage facilities, to provide for the settlement of disputes relating to the

sale of agricultural produce, to make adequate arrangements for market intelligence, with a view to informing the agricultural producer with the latest position in respect of market dealing with his produce etc.

To ensure the fulfilment of the objective of the UPRKUMA 1964, the work of establishment of the regulated markets in U.P. started from 1965-66. There were only two such markets during 1965-66. The number of such markets enhanced with every year upto the 1990. During 1970-71, there were 90 RAMs in U.P. while the number rose to 252 during 1980-81, and during the year 1989-90, the total went to a figure, 262. In January 1997, there were 263 such markets while the sub-mandies number, at present is 381. Thus, there has been a constant growth in establishment and maintenance of RAMs in U.P.

One market committee (Mandi Samiti) is constituted for each market which has a notified area comprising of villages which bring agricultural produce to the market. As per the 1997 records, there are 102 commodities in the Schedule brought under regulation by the state government. The notified area is the jurisdictional limit of a particular market. Each market committee has some responsibilities and duties such as : to ensure from dealings between the sellers and buyers of agricultural produce, to grade and classify and standardize the salable produce and auction the same, to get farmers receive the cost of their sold produce, to provide solution to disputes between farmers and traders due to differences in opinion, to acquire land for construction of mandi — market site — and to develop the same with various facilities for the buyers and sellers. The market committes are expected to be self-supporting bodies. These bodies charge market fee on the sale of commodities in the market as also they collect license fee from the traders and commission agents. During 1973, UPRKUM Parishad has been

established to supervise the developmental plans, control and issue directions relating to the functioning of market committees. The Mandi Parishad of U.P. has prepared various plans for construction of mandis, modern facilities at mandis, sub-mandis, fruit and vegetable mandis, rural hats, village roads and culverts and rural godowns etc. for multi-dimensional development of the villages and the villagers — the farmers — the producers of agricultural produce. The available statistics about such constructions completed, under completion process, and proposals for construction show quite encouraging and satisfactory picture in favour of farmers. It has been observed that there has been a tremendous increase in the arrivals of agricultural produce at mandie as also in the mandi income too, meaning thereby that the farmers have been benefited through the regulation of marketing and they are availing the facilities more and more.

12.4 DISTRIBUTION

The distributional perspectives of the RAMs of the state have been analysed with the help of various statistical and cartographic methods. The theoretical distribution of RAMs has been examined in various 63 districts of U.P. in terms of area, population, and inhabited villages. The spatial patterns have been examined in the light of Near Neighbour Analysis. In addition, various factors have been put on exhaustive exercises to reveal the exact extent of impact on RAMs in U.P. in terms of coefficient of correlation.

The general distribution analysis includes the actual numerical distribution and the testing of significant difference, if any, in the distribution of RAMs in 63 districts of U.P. The analysis reveals that there are 10 districts with one RAM each, 7 with two, 12 with three, 8 with four, 7 with five, 7 with six, 7 with seven, and 3 districts with 8 RAMs each in the state. However, there is only one district, with 9

such markets. There are 19 per cent districts of U.P. which are three market -districts while 15 per cent districts have just one market each. Only 1.6 per cent districts have the highest, and the second highest numbers of markets i.e., 11 and 9. The chi-square test unfolds that at the levels of 0.01, and o.02, the hypothesis, there is no significant difference between the observed and the expected frequencies of markets in 63 districts of U.P., stands unrejected while at 0.05 and 1.00, levels it is rejected and that an alternate hypothesis is accepted in each case.

The theoretical distribution has been examined in four ways — the general districtwise numerical distribution, the distribution in terms of area, population, and number of inhabited villages of districts. The general numerical distribution when analysed, revealed that only Nainital and Bullandshahr have $\overline{X} + 3\sigma$ value while 10 districts have $\overline{X} + 2\sigma$, 14 have $\overline{X} + 1\sigma$, 27 have $\overline{X} - 1\sigma$, and 10 have $\overline{X} - 2\sigma$ values meaning thereby that the $\overline{X} - 1\sigma$ is the biggest class against the $\overline{X} + 3\sigma$ which is the smallest one.

The distribution of RAMs against district-area analysis shows that three districts have RAMs with $\overline{X} + 3\sigma$ value, six districts have $\overline{X} + 2\sigma$, 23 districts with $\overline{X} + 1\sigma$, 6 with $\overline{X}$, 15 with $\overline{X} - 1\sigma$, and 10 with $\overline{X} - 2\sigma$ values. It is significant to note that as many as 6 districts have RAMs equal to the $\overline{X}$ for the state. When the distribution trends were examined in view of population of various districts, the values were : $\overline{X} + 3\sigma$ for 3 districts (Nainital, Jalaun, Hamirpur), $\overline{X} + 2\sigma$ for 5, $\overline{X} + 1\sigma$ for 14, $\overline{X}$ for 22, $\overline{X} - 1\sigma$ for 15, and $\overline{X} - 2\sigma$ for 4 districts (Kanpur Nagar, Basti, Gorakhpur, Azamgarh). This clearly shows that population has great significance in the distribution of RAMs as there are as many as 22, the highest number of districts in this distribution, showing the $\overline{X}$ value. From the standpoint of the number of inhabited villages in the districts, it has been observed that the

largest number of districts, 25, have $\overline{X} - 1\sigma$, 18 have $\overline{X} + 1\sigma$, 6 have $\overline{X} + 2\sigma$, 5 have $\overline{X} + 3\sigma$, and 7 have $\overline{X} - 2\sigma$ values of distribution. Raebareli and Lalitpur, however, have the X value in this context.

As far as it is related to the density of RAMs per 1000 km^2 in the districts of U.P., two districts (Saharanpur, Bullandshahr) have the highest ones (with 2.3, and 2.4 RAMs respectively). This class has been designated as the very high density class. There are three districts (Muzaffarnagar, Firozabad, Agra) in the high density class, while the medium, low and very low classes have 25, 19, and 14 districts respectively. Thus, the medium density class is the largest one followed by the low and very low density classes. The minimum density of 0.1 RAM for 1000 km^2 has been observed in Uttarkashi, Chamoli, and Pithoragarh districts. The minimum density class has districts from hill region, and the southern plateau region in addition to Basti, and Deoria of the plain region of the state.

The analysis of the locational patterns of the RAMs of various districts of U.P. examined through the Near Neighbour Analysis technique shows that there are absolutely no districts with absolute clustered/regular patterns. However, Muzaffarnagar does have the random pattern. The most of the districts, 46, have patterns in between Random and Regular. Only 6 districts have patterns between Random and Clustered. It is important to mention that 10 districts of the total of 63 districts of U.P. have not been included in the analysis as these districts have only one market each.

To examine the extent of impact of particular factors/variables on distribution of RAMs in various districts of U.P., five are to be mentioned which have been tested statistically. The individual effects of number of villages, area, population, road-length, and marketable surplus in the distribution of RAMs in various districts have gone to the extents : 0.1149, 0.1368, 0. 2955, 0.3375, and

0.4635 respectively revealing that the marketable surplus has affected the distribution most followed · by road-length, and population. However, the number of inhabited villages, and the areas of districts have little say in this reference.

12.5 TYPOLOGY

In the spatial analysis of markets, the taxonomical approach is, generally, deemed necessary as the markets have several characteristics which affect their personality and ultimately affecting the centrality, hierarchy, and trade area too. In view of this, this aspect has been taken up by the scholar. It has been noted that the typological studies centered on RAMs have hardly been presented. Hence, in case of the largest state of the country, this endeavour is in hand.

Although no statistical techniques have been employed to explore and develop the typology, in-depth and archival studies and exhaustive exercises have, undoubtedly, been done for the purpose. A specific 'function' on typologies has been developed by the scholar keeping in view the multiple internal characteristics of markets. Some of the such valuable characteristics are : Nature of site, modern facilities, sub-yards, periodicity, openings, closing days, nature of settlement, population, road-length, market fee, volume of crop arrivals during a year, and marketed surplus. Thus, the typology has come up as a twelve step discussion.

The typology based on nature of market site reveals two major types : RAMs with new sites and those without new sites. There are 162 RAMs located in 52 districts which have got new premises constructed on planned layouts with basic facilities for all functionaries especially, farmers. On the other, hand 100 RAMs located in 45 districts are still held at the traditional old sites. The

percentages of the RAMs with new and traditional sites are 61.83, and 38.17 respectively. The major types have been further divided into 5 sub-types.

The typology based on modern facilities takes into account the two major types of facilities — grading unit, and Kisan Bazar — available at the market sites. There are only 52 RAMs spreading over 26 districts having the facility of grading units, 68 RAMs of 35 districts have the Kisan Bazar facility. Only 31 markets of 17 districts have the both facilities together while 173 of 262 RAMs have absolutely no any such facilities at all. The percentages, respectively are : 19.84, 25.95, 11.83, and 66.03. This typology has further been divided into 5 sub-types.

The typology based on sub-yards takes into account the conditions of sub-yards. There are again two major types on this basis — RAMs with new sites, and those without new sites. There are 381 sub-yards in all in the state attached with the main or the primary markets. Out of these only 67 subyards located in 36 districts have the privilege of new market sites. In terms of percentage, they are only 17.58. The sub-yards still with old or ordinary sites, not developed on planned layouts, are 314 in number which share as high as 82.42 per cent. These are located in 56 districts of the state. The new sites and ordinary sites of the sub-yards have been further divided into three, and eight sub-types respectively.

The typology based on periodicity of the RAMs has two main classes : periodic and daily. While there are 257 daily RAMs out of 250 with 97.30 as percentage, the periodic markets are only 7 with only 2.70 per cent. It is, however, important to mention that 3 markets of Uttarkashi, Tehri Garhwal, and Chamoli districts have not been taken into account as these have not yet started functioning under regulation.

The non-daily RAMs have been sub-divided into three sub-types while the daily RAMs have been divided further into eleven sub-types.

On the basis of total number of weekly market openings , the RAMs have been classified into five main classes : those with a very low number of openings i.e., upto 12 only; those with low number of opening ranging from 12 to 24; the RAMs with medium openings ranging between 24 and 36; those markets with high number of openings ranging from 36 - 48; and those with very high number of weekly openings i.e., more than 48. The medium class has the highest number of RAMs 84, followed by the low and high classes together which account for 66 markets each. The very low and the very high classes have 21 and 20 RAMs respectively. In terms of percentages, the figures for the RAMs under various classes are : 8.80 (Very Low), 25.38 (Low), 32,30 (Medium), 25.38 (High), and 8.14 (Very High).

As against the weekly openings, the weekly closings have also been considered for typology. On the basis of this, the seven types for seven days — Sunday through Saturday — have been presented. The percentages of closings on these seven days are : 30.77, 14.72; 9.11, 12.27; 10.86; 10.86; and 6.41 respectively. This shows that Sunday is the most favoured day for closing. It is followed by Monday, Wednesday and Thursday/Friday (together). However, the Tuesdays and the Saturdays are the least favoured days for closing.

12.6 TYPOLOGY (... CONTINUED)

The typology based on nature of the market settlements takes into account the 7 various settlement types from urban area to village. There are 25 RAMs located in 22 districts of the urban area type, 148 RAMs located in 57 districts of the municipal board type, 59

RAM of 35 districts at the level of town area, and 27 RAMs of 18 districts at the level of village. However, there is just one RAM each of municipal corporation, cantonement area, and notified area types. The urban area, muncipal board, town area, and village type RAMs have their percentage 9.54, 56.49, 22.51, and 10.30 respectively while one market each of the remaining three types have 0.39 per cent each.

The 262 RAMs of the state have been classified on the basis of population — a very common criterion — too. There are 5 types under this typology : The RAMs having a population upto 10,000; markets with 10,000 to 20,000, markets with 20,000 to 50,000; the markets with 50,000 to 1 lakh, and the markets having a population more than one lakh. These 5 types have RAMs as 49, 58, 79, 38, and 58 while their respective percentages are 18.74, 22.12, 30.14, 14.50, and 14.50.

The typology — the ninth one is based on the crop arrival related market fee. Actually, this is the classification which has been presented by the Mandi Parishad itself. It takes into account the normal market fee collected from crop arrivals at various markets of the state. These RAMs have been divided into four types — A Special Class, A Class, B Class, and C Class. The annual collection of market fee upto Rs. 20 lakhs gives a RAM the C class, Rs. 20 lakh to 40 lakh collection gives a market a B class status while Rs. 40 lakh to 80 lakh is the range for the A class status and more than Rs. 80 lakh collection annually from market fee is the basis to give a market the A Special class status. The number of RAMs under each type (with their respective percentages) are : 33 (13.60), 33 (13.60), 74 (28.24), and 122 (46.56).

The typology has also been presented on the basis of road-length per 100 km^2 area of various districts of U.P. The road-length has a great significance in marketing process. There are 5 classes : upto 15 km., 15 - 30 km., 30 - 45 km. 45 - 60 km. and more than 60 km. as very low, low, medium, high and very high, road-lengths in various districts. The 40.85 per cent of the RAMs located in 23 districts have the largest share of road-length in U.P. Thus, the medium class stands the first in this case, followed by the high road-length class with 33.59 per cent of the total markets located in 20 districts of U.P. The third largest class is the very high road-length class which has 16.79 per cent markets. The very low road-length class has the minimum per cent of markets i.e., 1.14 only which follows the second smallest, the low road-length class with 7.63 per cent of the RAMs of the state.

Marketed Surplus is another important internal characteristic of market. More the market suplus, bigger the market and vice-versa. Hence, on this basis also the types of markets have been presented. The volume of annual marketable surplus has been divided into 5 classes (thousand metric tonnes) — upto 50 , 50 - 100 , 100 - 150 , 150 - 200, and more than 200. Observations reveal that 28 per cent RAMs fall in the first class which has 22 districts. It is followed by the last class of the series with 21 per cent (i.e. 10 districts), further followed by the second class with 20 per cent of markets and with 12 of the districts. The middle class i.e. the third class measuring 100 - 150 thousand metric tonnes of marketable surplus is found in 7 districts. This class follows the fourth one which has a share of 19 per cent markets in 7 districts of the state.

Crop arrival in the market is one of the most important characteristic features of a RAM. This is also a parameter which is taken into account while deciding the total personality of a market. Hence, this

consideration has also been taken into account while discussing typology and in this case the average annual total arrivals have been considered. Five classes, just like the marketed surplus have been presented (thousand metric tonnes): upto 50, 50 - 100, 100 - 150, 150 - 200, and more than 200. The analysis shows that the largest number of markets, 123 (47.70 per cent) located in 48 districts have the smallest class. There are 72 markets (28.65 per cent) located in 42 districts, fourth in order of volume classes, is the one which has the smallest number of districts, just 10, which also has the smallest number of markets, just 12, contributing to this extent of volume of crop arrivals in the state. The biggest volume class i.e. more than 200 thousand metric tonnes class, has 30 markets (11.52 per cent) located in 20 districts.

12.7 HIERARCHY

The nodes on the surface have a size-system. Various terms like hamlet, village, town city, and metropolis have been used in the analysis of settlements. Some principles like K = 3, K = 4, K = 7 have also been suggested in this context. There has been a characteristic absence of hierarchical study of RAMs. Hence, this perspective has been taken up for the study.

A rigorous exercise has been done to evolve a methodology as a base for identifying the hierarchical orders of the RAMs of the state. Eight major causative factors independently affecting the absolute size of RAMs have been take into account. These factors are those which leave impact on the personality of RAMs. These are : Nature of market site, existence of modern facilities, number and nature of attached sub-yards, periodicity, market settlement population, road-length, market fee, and the volume of crop arrival in the market. A weightage scheme has been prepared and appropriate weights have

been allotted to various forms of the above parameters subject to the maximum weight to the most effective form being one. Thus, in all, each market has got some points out of eight. It has been converted into a Composite Index by multiplying it by 100. Thus, the Composite Index value stands out of 100. After getting the C I value of all the 262 RAMs of the state, the plotting of all of these C I values has been done on a graph sheet to present a scatter diagram. It was noted that there emerge three tiers : The biggest constellations of points (with low C I values) lies in between the C I values 30 and 50. Another group, rather smaller in number of points, is distinctly seen between a level above 50 and upto 75, and yet another, although the smallest group of points, having the high C I values lies beyond the 75 C I value. Thus, 3 distinct orders have been observed in the exercise. The numbers of the points representing markets under these orders : are 136, third order, low; 96, second order, the middle; and 30, first order, the high order.

The hierarchical status of settlements has, generally, shown 5 orders and that the market hierarchy has been compared with the K = 3 system. But the case of RAMs is different from the periodic markets as in the latter case, there may be one, considerably big or first order point in the entire region under study, followed by K = 3 system. But in the case of RAMs, there can be no such one first order node. Since, the government has taken up the case of establishment of regulated markets, in the entire state, there would be some big markets, of course, but in a decentralized form, meaning thereby that the various sub-regions of the entire study region have such big nodes as per the government scheme. Thus, there may be several first order nodes and in the present case there are 30 first order RAMs in 14 divisons of U.P. — roughly two RAMs of the first order in each administrative division. These first order

markets are, of course, surrounded by the second, and the third order markets.

There are 30 first order RAMs, 96 second order, and 136 third order RAMs in the entire state. Also, there are 381 sub-yards, too, in the state. Thus, if these figures are taken into consideration the first order is, of course, not one very big node — rather there are multiple big nodes — as many as 30. But the second order are not twice but roughly 3 times, and third order although not thrice but nearly 2 times, and the number of smallest nodes i.e., the subyards, 381, is also nearly 3 times. And, further, if the periodic markets are also considered in this series, then again the next number would be around three times of 381. Thus, in a way, the $K = 3$ system does have some say in this respect too (of course not the full say which is also not possible excepting in the hypothetical cases).

Observations show that at the division level, the highest numbers of first, second, and third order markets are found in Kumaon (6), Meerut-Jhansi (12 each), and Meerut (22) respectively. These are 8 divisions which have just one first order market each, the Garhwal division has just one second order market. In case of the third order markets, the minimum number is that of 2 which is related to the Kumaon division.

The district level observations show that the 30 first order markets are located in 24 districts, 96 second order markets have their locations in 44 districts, while 136 third order markets find their locations in 54 districts. There are 9 districts — Nainital, Pilibhit, Almora, Kanpur Nagar, Sultanpur, Basti, Azamgarh, Pratapgarh, and Varanasi — which have no third order markets — although these are the lowest order markets as also in abundance. All the districts of four divisions — Meerut, Moradabad, Bareli, Allahabad — have the second order markets unlike other divisions. There are 10 districts — 6 hill districts — Uttarkashi, Tehri Garhwal, Pauri Garhwal,

Chamoli, Pithoragarh, Almora, and Kanpur Nagar, Basti, Azamgarh, and Pratapgarh which are just one market districts and hence only one order is found in each of these districts. Two market districts, 7 in number, obviously do not have all the 3 tiers of markets. Amongst the first order market districts, Nainital has 6 markets, Aligarh 2 and all the rest 22 district have just one each.

Bullandshahr, although has 11 markets, the highest number of markets in the entire state, yet it has no first order market as also it has only 2 second order markets too, and all the rest, 9, markets are of the third order. Nainital district has the second largest number of markets, 9, in the state. It has 6 first order and 3 second order markets. Thus, there are no third order markets in Nainital district. The districts of Saharanpur, Budaun, and Agra stand third in order of rank related to number of markets in a district as they have 8 markets each. Amongst these, Saharanpur has 6 third order and one each in first and second orders; Bullandshahr has four markets in third and 7 in second order, while Agra has 6 markets in third and 2 in second order. Thus, despite having the third largest number of markets in these districts, Agra and Budaun have no first order markets.

The major characteristic features of the first order RAMs are : The each C I value is above 75, on an average, the score on every parametre received by this is above 0.6 . Such a market has at least a new market site, two modern facilities, 5 or 6 ordinary sub-yards and/or 3 sub-yards with new sites, at least 5 times a week the market periodicity, more than 50,000 the market settlement population, more than 45 km per 100 km^2 the road-length, annual market fee collected by the market committee is more than Rs. 40,00,000, and 1,50,000 metric tonnes of average annual crop arrival at the market. Such markets, generally, are of A Special

class under the UP Mandi Parishad classification. These market settlements are, generally, of urban agglomeration or municipal board status.

The major salient features of the second order markets are : The each C I value is above 50 (but not above 75). Each of the markets on an average has secured a score above 0.5 in evey parameter. Such a market has at least one modern facility, more than 2 ordinary sub-yards/or one new site yard, more than twice the periodicity of the market, and at least 20,000 population. The road-length is more than 30 km per 100 km^2 area. Market fee per annum is collected between Rs. 20 - 40 lakhs. The volume of average annual crop arrival is more than 1,00,000 metric tonnes. About 1/3 of these markets have A class of the U.P. Mandi Parishad while the rest belong to B class — a few have C class too.

The third order markets are those which have secured less scores than the second order markets in case of every parameter in general.

12.8 TRADE AREA

The importance of the market is dependent upon producers and the consumers who in turn are dependent upon the space on which they live. Therefore, in the spatial context, the area of the space from where the inhabitants interacts with the particular point of focus or the market is known as the trade area of that particular market. The other words used in the same sense are influence area, catchment area, command area, service area, market area, and the hinterland.

The trade area, therefore, is also an important characteristic feature of a market. It also has an important say in determining the personality of the market — bigger the trade area of the market the higher the status of the market.

In general, the trade area is taken in terms of areal surface (e.g. km^2), but it can also be referred to the number of people as also the number of settlements too. A market serves a certain number of persons, who live in a certain number of settlements, which are located on a particular areal surface. Hence, the trade area can be expressed in three ways : In terms of number of persons, in terms of number of settlements — particularly villages, and in terms of the surface area.

The methodology adopted in the present case, however, is not an empirical one, rather the theoretical only for want of time and funds as the study area is the entire state of U.P. with all the 262 regulated agricultural markets. Simple formulations have been applied to find out the average trade area of markets at the district level in all the three contexts — area, population, and the number of villages. However, another exercise has also been made through measuring statistically the average space/population/number of villages served by a market in terms of standard deviation upto the extent of ± 3. The trade areas of the first order RAMs have also been worked out but theoretically.

Under the present approach, five classes i.e. very small trade area, small trade area, medium trade area, large trade area, and very large trade area have been taken into consideration in all the three contexts — Area, population, and the number of villages. The findings of the study in this relation are as follows :

As regards the areal or spatial trade area i.e. trade area in terms of physical area, it has been observed that the largest number of markets have small trade areas. The 57.25 per cent of the RAMs have small trade areas, followed by the medium trade area class. On the other hand, there is no much difference between the rest three trade area classes as the very small trade area markets and

the very large trade area markets are in same number, and the large trade area markets are not much far off these numbers.

With regard to the trade area in terms of population, the observations show that the largest number of RAMs, 51.52 per cent, have the small trade area followed by the medium trade area markets which are less than half of the above again followed by the very small trade area class which again is about one-half of the medium class. The large trade area and the very large area classes almost have the same conditions which jointly are nearly equal to the number of markets under the very small trade area class. Thus, the predominating class under the present context is similar to the first context — the small trade area class.

In case of the trade area in the context of the number of villages, the results reveal that although the largest number of markets fall under the very small trade area class followed by the small trade area class, the difference between the two is just phenomenal, of only one market, hence it is rather negligible and it may be said that both the classes have nearly the same situation. The large trade area class is the smallest one in terms of markets followed by the very large trade area class. Both of these classes have very small number of markets.

Under the statistical approach, there used to be six classes like $\overline{X}$ + 1σ ..... $\overline{X}$ - 3σ. The general trade areas under all the three contexts have been statistically measured, the results of which are as follows:

In case of areal context, the class having the largest number of RAMs shows that the small trade area is the rule. More than 65 per cent markets fall under the $\overline{X}$ - 1σ class followed by the $\overline{X}$ - 2σ class which has 26 per cent RAMs. Thus, there are more than 90 per cent of RAMs which have the small/very small trade areas. The

percentages under the $\overline{X} + 1\sigma$, $\overline{X} + 2\sigma$ and $\overline{X} + 3\sigma$ classes are just 3.43, 1.53, and 3.43 respectively.

With regard to the population context, the largest and the very high percentage of RAMs, 85, have the $\overline{X} - 1\sigma$ class trade area. It is followed by the $\overline{X} + 1\sigma$ class trade area markets which have a percentage of 10.68. It makes crystal clear that the $\overline{X} - 1\sigma$ class predominates the series with no near runner as there is too much difference between the largest number of RAMs and the second largest number of RAMs, and their respective classes, when the one is $\overline{X} - 1\sigma$, the other one is $\overline{X} + 1\sigma$.

As far as it is related to the trade area on the basis of the number of inhabited villages, the statistical observations exposed that 69.08 per cent RAMs have fallen under the $\overline{X} - 2\sigma$ trade area class followed by the $\overline{X} - 1\sigma$ trade area class which has a value even below one-third of the former meaning thereby that there is a more pronounced difference between the two. Further, the $\overline{X} + 1\sigma$, $\overline{X} + 2\sigma$, and $\overline{X} + 3\sigma$ classes amongst themselves have only the negligible difference but if they join together, they have the value equal to just half of the $\overline{X} - 1\sigma$ trade area class. This all makes it clear that the difference is again the more pronounced one.

12.9 SPATIAL DESIGNS

Some scholars have used the term for marketing systems also but in the present case, its purpose is, rather different. Spatial distribution of points/nodes in any area represents some system. If the points are serially joined, the resultant form of the constellations of these emerge into some patterns. By and large, these systems/forms are near to some geometrical patterns. These geometrical patterns or systems or forms over an area are known as 'spatial designs'. Thus, the markets/points/nodes also have some system(s). It must be noted here that when periodic markets are joined or linked in

opening-day-sequence i.e. temporal order, such a special system is known as a market cycle/circuit rather than a system which is arranged not necessarily in temporal sequence and presents a spatial design. Thus, a market cycle may be a spatial design but the latter itself may not always be the former. The objective of the present treatise is to reveal such systems of regulated agricultural markets of U.P. as it has not been presented so far by any scholar.

The discussion is based on first order and second order RAMs as all the 262 RAMs could not be taken up simultaneously for various reasons. There are 30 first order RAMs, and 96 second order RAMs. The designs have been presented in these references only.

As far as it is related to the design formed by the first order RAMs, it has been observed that there are four types of spatial designs formed by these centres : triangular, rectangular, linear, and quinsided.

The triangular pattern of first order RAMs has been found to exist in the hill region in which Haldwani, Kashipur, and Rudrapur markets are involved. It has also been located in western U.P. region in which Moradabad, Bareilly, Shahjahanpur, and Pilibhit RAMs are included. This design has also been discovered in the central U.P. region which is the resultant form of Kanpur, Lucknow and Sitapur RAMs.

The rectangular spatial design has been located in the hill region which takes into account the Haldwani, Rudrapur, Kichcha, and Khatima RAMs of the first order.

The linear design has been observed in western U.P. region which has come into being due to the serially located markets of Saharanpur, Muzaffarnagar, Meerut, Hapur, Aligarh, Hathras, Mathura, and Mainpuri.

A five sided figure has also been noted in the eastern U.P. region. It has come into existence due to the locations of Bahraich, Gorakhpur , Ballia, Varanasi, and Allahabad.

Thus, six cases of spatial design have been located by the scholar in the case of first order RAMs of U.P.

As far as it related to the second order RAMs, the only three different designs have been observed, although the number of cases are as many as 15 : six of the triangular designs, six of the rectangular, and three of the linear designs.

The triangular design has been noted in the hill region which is formed by the RAMs of Baraut, Khekra, and Mawana. In Moradabad district two sets of triangular designs have been observed with one common market — Sambhal. Amroha, Hasanpur and Sambhal make one triangular design while Sambhal, Bahjoi, and Chandausi make an another one. In Hardoi district, Hardoi, Madhoganj, and Sandila, form one triangular shape. The sixth triangular design is presented by Rath, Maudaha, and Charkhari RAMs of Hamirpur district.

There are six other cases of the rectangular design which are made by the second order RAMs of the state. Out of these, three cases are located in the western U.P. region. In Bijnor district, four markets — Najibabad, Kiratpur, Dhampur, and Chandpur make a rectangular shape. In Budaun district, four markets — Sahaswan, Bilsi, Ujhani, and Budaun — together give form to an other rectangle. In Aligarh district, Khair, Atrauli, Chhara, Sikandararau make one rectangle. The Farrukhabad district also has one rectangular design formed by the four second order RAMs of the district namely Farrukhabad, Kaimganj, Chhibramau, and Kannauj. The Bundelkhand region or the Jhansi division has two cases of rectangular designs. One from Jhansi district has come up due to serial locations of Chirgaon, Mauranipur, Gurusarai, and Month,

while the other one is located in Jalaun district and it has come up due to the locations of Orai, Jalaun, Konch, and Ait RAMs. The linear cases observed by the scholar in this context are those which are located in the central U.P. region. There are three such cases. The first one involves three RAMs of Etawah, Bharthana, and Auraiya. This linear pattern is somewhat like an angular pattern also. Another case has been noted in Kheri district, which consists the RAMs of Palian Kalan, Golagokarnnath, and Mohammadi. While the last one has been observed in Raebareli district involving the RAMs of Lalganj, Raebareli, and Jais.

Thus, in all 7 cases in context of the first order RAMs, and 15 cases in the context of second order RAMs have been observed by the scholar. This clearly reveals that there do exist some spatial designs or geometrical patterns or systems in an area with numerous nodes, and the same is true in this study too.

12.10 REGULATED AGRICULTURAL MARKET, LUCKNOW — A CASE STUDY

After presenting the major perspectives of the spatial analysis of the regulated agricultural markets of U.P., it seems proper and necessary too, to study at least one RAM from vicinity. Through this, various details come up which throw light on the real condition of these centres at the state level. To acquaint with the very real conditions under which an institution works, the detailed study is done as a case study. At this moment, the case of Lucknow RAM has been taken up for such a study.

The case has been selected just on the random basis as also due to the constraints of time and financial resources, besides the convenience too. The methodology adopted for the detailed study in this case involves the personal interview and survey schedule through which the primary data have been collected showing the

very real/true conditions prevailing in the RAM of Lucknow. Three types of survey schedules used are on (i) the market, (ii) the producer — the farmer — the seller, and (iii) the trader — the purchaser.

The RAM of Lucknow has been established in 1972. It is located on Sitapur road, the national highway number 24 in the trans-Gomti area of the city. The construction of the yard took place in 1978, and the mandi shifted from Daliganj to this yard, as also to one part of this yard, the fruit marketing of the city shifted in 1986. Lucknow is, primarily, a primary market but some secondary arrivals also are there from various other markets of the state and even outside the state too. The primary arrivals are paddy, rice, wheat , mango and arhar, while the secondary arrivals include the items like Apple, Banana, Orange, Gram, etc.

The market area consists of the area of 57 Nyaya Panchayats and Gram Sabhas under the five development blocks of the districts. The total land is 1,28,296 hectare of which only 45,883 hectare is under irrigation.

The market yard has the warehousing facility to the capacity of 1000 metric tonnes for grains while for seeds and fertilizer too there is an additional facility of 4500 metric tonnes in its market area. At the yard site , the centrally air-conditioned warehouse has the capacity of 1000 metric tonnes. The Kisan Bazar facility is also available besides the other facilities like the availability of moisture meter, weighing scale etc.

The market is well connected with its entire market notified area through metalled roads/link roads. The major villages from where the farmers bring their agricultural produce to this market are Itaunja, Bakshi Ka Talab, Kursi, Behta, and Mohammadabad. Mohammadabad is located as far as 55 km from Lucknow while all others are located within 25 km radius from Lucknow. There are four

sub-yards also attached with this market. These sub-yards are Malihabad, Kakori, Itaunja, and Mal.

There are three types of shops — A, B and C in the mandi. The yard has several platforms of 12 x 12 m size each for auction purpose. Main shops are also there for traders. The mandi has been categorised by the U.P. Mandi Parishad as of the A Special class. The annual market fee received by the committee at this market is to the tune of Rs. 3,00,00,000.

However, one surprising fact has come to the knowledge that outside the market yard, Mafia traders threaten the farmers for taking their produce to Pandeyganj, and Daliganj directly instead of bringing the same to the regulated agricultural market.

The farmers come from the notified area of which main villages are Kamlapur, Itaunja, Bakshi Ka Talab, Behta, Kursi Road, Mehmudabad. It has been observed that almost all the major Hindu castes as also some Muslims are engaged in farming. There are 28 per cent of the farmers from the upper Hindu castes. However, the backward castes have the highest percentage — as high as 40. The 24 percentage is shared by Muslims. Amongst the farmers, 4 per cent are illiterate while another 4 per cent have higher education too. The highest percentage i.e. 48 per cent is for those who have received education upto highschool/intermediate level. The farmers in bringing their produce to the yard, take upto two hours. There are 36 per cent farmers who take 1 to 2 hour time to reach the market. While 32 per cent farmers take more than two hours. Only 16 per cent farmers take less than one hour time to reach the mandi place. The most of the farmers, 72 per cent, come from a distance of 10 - 20 km. The farmers coming from less than 10 km distance have a percentage of 16 while those coming from more than 20 km distance, the percentage is 12. This makes quite clear that most of the farmers come from a distance within 20 km radius from the

mandi. Some farmers attend weekly markets too. The major weekly markets of this area are Itaunja (32 percent), Behta (24 pe cent), Bakshi Ka Talab (12 per cent), Mehmudabad (12 per cent), Kamlapur (8 per cent), Mohan (4 percent) and others (8 per cent). Most of the farmers have regular visits to the market during both the Rabi and Kharif seasons. However, during the Rabi season, the farmers have less number of visits for disposing their produce.

The farmers in general, have small land holdings. There are 32 per cent farmers who have 10 - 20 bighas of land holdings. Only 16 per cent of them have more than 20 bighas each while as many as 52 per cent of them have land holdings below 10 bighas each. However, most of the land under cultivation is irrigated. Thirty-six per cent of the farmers have 10 - 20 bighas of land under irrigation. Only 8 per cent of them have more than 20 bighas of irrigated land while as many as 56 per cent of the farmers have upto 10 bighas of land under irrigation. Amongst the farmers surveyed, all the 100 per cent of them had paddy and wheat as their main crops. Potato, pulses, and oilseeds are grown by 48 per cent, 44 per cent, and 4 per cent farmers respectively. It has also been noted that the marketed surplus of the farmers is quite low in comparison to their total produce. Yet, almost the entire surplus is sold at the RAM excepting a few cases.

The decision about the sale of produce of the farmers is generally based on the immediate needs of the family. Hence, the produce is sold generally, immediately after the harvest.

As far as it is related to traders some of the significant features have been noted as follows :

Most of them are from Daliganj, Khadra, and other localities which are located close to the mandi place. The traders come by rickshaw, tempo, or by their own vehicles to the market yard. It has been noted that 40 per cent of them have their own vehicles while another

40 per cent come by rickshaw. Thirty-five per cent of them come to the mandi from a distance of 2 km only while other 35 per cent come from a distance more than 5 km. Thus, 30 per cent of the traders come from a distance 2 - 5 km from the mandi. It is significant to note that the most of the traders, 60 per cent, are from the upper castes of Hindus, and only 25 per cent belong to the backward class. There were only 5 per cent schedule caste traders while the Muslim traders had a percentage of 10. The traders have no higher education and nor they are illiterate too. Forty-five per cent of them have received education upto eighth standard only while 55 per cent of the traders have high school or intermediate education.

The traders visit the yard regularly. Such traders are 95 per cent and all of them are from the vicinity only. This is equally true to both the Rabi and the Kharif seasons. Those who visit more frequently do more business than those who visit the market by less number of times. Most of them make business in wheat, paddy/rice besides pulses, oilseeds, and potato as per the season. Fruits are also sold-purchased at this mandi — mango, apple, and bannana predominating all the fruits.

12.11 PROBLEMS AND SUGGESTIONS

This chapter is centered on the analysis of the major problems as also the solutions to the same. It has been observed that the distribution of markets in the state has some anomalies. In view of the heavy population concentration as also the needs of the people, there are less numbers of RAMs, especially in, eastern part of U.P. On an average there are 18.71 RAMs per division while in case of Azamgarh, Gorakhpur, Allahabad, especially, the RAMs are only 10, 14, 11, and 11 respectively. The scholar has made vigorous efforts to select divisions, districts, and even the particular RAMs for the desired additions. On most reasonable grounds, only some additions have been suggested (rather than the large scale

additions). More particularly, six RAMs for Azamgarh, three for Gorakhpur, two for Allahabad, and two RAMs for Varanasi have been suggested as additions.

12.12 EPILOGUE

This chapter, the last one, presents the summary of the entire research work, under the the title EPILOGUE.

REFERENCES AND BIBLIOGRAPHY

Aherwadkar, 1972 : Role of regulated marketing in the development of market centres : A case study of Marathawada, in NCAER (ed.); *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 187-191.

Ahmad, A. and Raza, M. (ed.) 1988 : *The Geography of India (1982 - 1987)* The 26th International Geographical Congress held at Sydney, Aug., pp. 21-26.

Andrade, C.P. and Johnson, A.A. 1972 : The role of market centres and regulated marketing in the development process : The Khanna example, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 160 - 165.

Applebaum, W. 1954 : Marketing geography, in P.E. James and Jones, C. F. (eds.) *American Geography — Inventory and Prospects*, Syracuse University, pp. 245-51.

Awasthi, A. 1984 : *Market Towns and Spatial Development — A Case Study of Bhopal Region of M.P.*, Ph. D. Thesis, Geography Department, Bhopal University.

Baranu, H. and Baneja, J. D., 1956 : *The Fairs and Festivals of Assam*, Gauhati, D. N. Dutta.

Barnum, H., 1964, : *A Model of the Markets for Food Grains in India*, Ph. D. Thesis, Berkley, University of California.

Bauer, P.T., 1976 : The state control of marketing in developing countries, pp. 30 - 34 in Izraeli and others (eds.) *Agricultural Marketing in Developing Countries*, INCOMAS, Vol. II, New York, John Willey.

Bawa, R. L., Srivastava, A. K., and Mishra, U. K., 1972, Market Towns and Spatial Development — A case study for north Bihar, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 179 - 182.

Bedekar, S. L., 1972, 1972 : Role of regulated markets in the development of rural areas, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 99 - 102.

Berry, J. B. L., 1967 : *Geography of Market Centres and Retail Distribution*, New Jersey, Prentice Hall, Englewood Cliffs.

Bhat, L. S., 1972 : Regional planning in India — A suggested model, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 89 - 92.

Bhowmick, K. L., 1972 : Rural market and system of mass communication, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 139 - 141.

Bromley, R. J. 1971 : Markets in developing countries — A review, *Geography*, 56, 124-32.

1974 : *Periodic Markets, Daily Markets and Fairs* : A Bibliography, Monash Publication in Geography.

1979 : *Periodic Markets, Daily Markets and Fairs* : A Bibliography (Supplement to 1974), Monash Publication in Geography.

Bromley, R.J. et. Al., 1974 : *Market Place Studies : A World Bibliography upto 1972*, London School of Oriental and African Studies, 4.

Bumb, B. K., 1972 : Regulated marketing in Udaipur district : A case study of Udaipur Mandi in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 175 - 178.

Chandra, A. , 1994 : *Ecology and Marketing Geography — A Case Study of Central Nepal Region*, Ph. D. Thesis, Geography Department, Gorakhpur University.

Chandran, K. 1978 : *An Analysis of Marketing Functions in Weekly Markets — The Case Study of Shiva Ganga*, M. Phil. Thesis, Geography Department, Faculty of Science, Madurai Kamraj University.

Chaturvedi, U, 1996 : *Spatial Organization of Rural Periodic Markets in Gonda District, U.P.*, Ph. D. Thesis, Geography Department, Avadh University.

Chaudhary, S. 1975 : *Trade and Commercial Organization in Bengal (1650 - 1720) with Special Reference to English East India Company*, Calcutta.

Chong - Yeong Lee, 1982 : The food marketing system in China, *Journal of Rural Development,* 5, April, 91 - 107.

Clough, F. , 1981 : Farmers and traders in houseland, *Development and Change*, Vol. 12, No. 2, pp. 273 - 92.

Dandekar, V. M., 1972 : Prices, production, and marketable surplus of foodgrains, *Indian Journal of Agricultural Economics*, XIX, 374, July - December.

Dixit, A., 1996 : *Regulated Markets of U.P.*, Ph.D. Thesis, Geography Department, Avadh University.

Dixit, R. S., 1975 : Avadh — An historico-geographical analysis, *The Avadh Geographer*, 1, pp. 7 - 11.

Dixit, R. S., 1977 : On the delimitation of the Umland of a metropolis : Kanpur — A case study, *National Geographer*, 12, 1, June, 77 - 92.

Dixit, R. S. , 1979 : *Market Centres and their Spatial Development in the Umland of Kanpur*, D. Phil. Thesis, Department of Geography, Allahabad University (sponsored by the University Grants Commission, New Delhi).

: *Glimpses of the Umland of an Indian Metropolis*, Lucknow, Mrs. Asha Dixit.

Dixit, R. S., 1980 : Geographic perspectives in marketing, *Indian Journal of Marketing*, X, 10, June, pp. 24 - 27.

: Marketing geography - A bibliographic note, Uttar Bharat *Bhugol Patrika*, XVI, 1, June, pp. 77 - 78.

: Role and rationale of market centres in socio-economic development, *Indian Journal of Marketing*, XI, I & II, Sep. - Oct., pp. 21 - 25.

: Market synchronization, *The Indian Geographical Journal*, 55, 2, December, pp. 58 - 61.

Dixit, R. S., 1981 : Transport accessibility of market centres of Kanpur Metropolis. *The Deccan Geographer*, XIX, 1, January-June, pp. 45-52.

: Measures of spatial connectivity and their application to Kanpur tehsil — Topological approach, *Indian Journal of Landscape Systems and Ecological Studies*, IV, 1 & 2, September, pp. 11 - 16.

Dixit, R. S., 1982 : *Typology of Market Centres in the Umland of Kanpur*, Allahabad, G. B. Pant Social Science Institute.

: *An Exhaustive Taxonomical Guide for Further Research Work in Typology of Market Centres*, Lucknow, I.T. College.

: Spatial organization of market centres in the Umland of Kanpur Metropolis — A case study, *Indian Journal of Landscape Systems and Ecological Studies*, 5 1 & 2, September, pp. 104 - 120.

Dixit, R. S., 1983 : Spatial distribution of market centres in the umland of Kanpur Metropolis, *Geographical Review of India*, 45, 1, pp. 39 - 54.

: *Marketing geography — A Panoramic View*, Lucknow, I. T. College.

: A step in transformation of rural landscape, *The Deccan Geographer*, XXI, 2, December, pp. 337 - 342.

: Sunday through Saturday, *The Indian Geographical Journal*, 58, 2, December, pp. 196 - 197.

: Market systems and spatial designs, *Vikassheel Bhugol Patrika*, 2, 2, December, pp. 115 - 118.

Dixit, R. S., 1984 : Market centres and spatial development, *Vikassheel Bhugol Patrika*, 3, II, pp. 72 - 74.

: Market centres and their spatial development in the umland of Kanpur, *Indian Dissertation Abstracts*, 13, 1 - 4, pp. 1 - 3.

: Distribution of market centres, *Indian Journal of Marketing Geography*, 2, 1, March, pp. 14 - 20.

: Market cycles, *Indian Journal of Marketing geography*, 2, II, pp. 102 - 105.

: Transport connectivity of market centres in the umland of Kanpur, *The Indian Geographical Journal*, 59, II, December, pp. 181 - 186.

: Classification of market centres in the umland of Kanpur, *Indian Journal of Landscape Systems and Ecological Studies*, 7, II, December, pp. 57 - 62.

: *Spatial Organization of Market Centres in Hamirpur District, U.P.*, Post-Doctoral Research Project Report, New Delhi, Indian Council of Social Science Project.

: *Market Centres and their Spatial Development in the Umland of Kanpur*, Allahabad, Kitab Mahal.

Dixit, R. S., 1985 : Typology of market centres based on human number, *Geographic Mosaic*, (Mukhopadhyay, S. C. ed.), Calcutta, Modern Book Agency, pp. 722 - 733.

: Traders' movement and travel patterns — A case study of Hamirpur district U.P., *Transactions : Indian Council of Geographers*, 15, June, pp. 11 - 14.

: Typology of market centres based on marketing hours, *Vikassheel Bhugol Patrika*, 4, I & II, pp. 42 - 44.

: Market centres of a backward economy — Hamirpur district, U.P., India — Chronological persepective, *The Deccan Geographer*, XXIII, III, October - December, pp. 132 - 145.

: Spatial organization of market centres of Hamirpur district, U.P., *Indian Journal of Marketing Geography*, 3, 1 - 2.

: Spatial organization of market centres in Hamirpur district, U.P., India, *Market Place Research*, in Gormsen, E. (ed.), Mainz, Geographisches Institut Der Johannes-Gutenberg Universitat, pp. 107 - 118.

: Spatial organization of market centres, *Proceedings of the International Seminar held at the International Crop Research Institute for the Semi-Arid Tropics*, Hyderabad, p. 155.

Dixit, R. S., 1986 : Role of market centres in regional development and their spatial planning in the metropolitan region of Kanpur, in L. R. Singh (ed.) *Regional Planning and Rural Development*, Allahabad, Thinkers' Library, pp. 183 - 210.

: Market centres of a backward economy - Hamirpur district, U.P., India : Perspectives on trade area, *Transactions : Indian Council of Geographers*, 16, January, pp. 29 - 41.

: Role of small and medium towns in the context of regional development, in K.P. Bhattacharya (ed.), *Human Settlements in Developing Countries*, Calcutta, Habitat Centre, pp. 213 - 218.

: Market centres of a backward economy — Perspectives on market cycles, *Indian Journal of Landscape Systems and Ecological Studies*, 9, 1, pp. 121 - 25.

: Geography of commercial activities — Furtherance of Marketing geography, *The Indian National Geographer*, 122, pp. 99 - 108.

: Market centres of Hamirpur district, U.P., *Geographical Review of India*, 48, 2, pp. 34 - 40.

: *Marketing Geography — Theory and Practice*, Allahabad, Kitab Mahal.

Dixit, R. S.. 1987 : Distribution of market centres in a backward economy, Hamirpur district, U.P., *The National Geographical Journal of India*, 33, 1, March, pp. 80 - 88.

: Glimpses of the umland of a metropolis — The case of Kanpur, in C. S. Yadav (ed.) *Perspectives in Urban Geography*. Vol. IX, Rural Urban Fringe, New Delhi, Concept Publishing Company.

: Market centres of a backward economy, Hamirpur district, U.P. — Perspectives on centrality and hierarchy, in V. K. Srivastava (ed.) *Commercial Activities and Rural Development in South Asia*, New Delhi, Concept Publishing Company.

: Mahoba by 2001 — The case of a small town from a backward economy, *Transactions : Indian Council of Geographers*, 17, pp. 9 - 15.

Dixit, R. S., 1988 : Spatial organization of market centres in Hamirpur district, U.P., *Indian Council of Social Science Research, Newsletter*, XVIII, 4, January - March, 123.

: Marketing geography — The Indian scenario : Inventory and prospects, *Indian Council of Social Science Research*, Newsletter, XX(I), April - June, pp. 96-97.

: An inventory of bibliographies on geography of marketing and commercial activities in India, *Geographical Review of India*, 51, 1, pp. 84 - 87.

: The march of marketing environment in geographical studies towards 2001 — The Indian scenario, *Transactions : The Indian Council of Geographers*, 19, January, pp. 15 - 28.

: Spatial organization of market centres in Hamirpur district, U.P. *Indian Council of Social Science Research, Newsletter*, XVIII (4), January - March, p. 123.

: *Marketing Geography : The Indian Scenario — Inventory and Prospects*, Post-doctoral Research Project Report, New Delhi, Indian Council of Social Science Research.

: *Spatial Organization of Market Centres*, Jaipur, Pointer Publications.

Dixit, R. S., 1989 : *Periodic Marketing in an Urban Environment — Mahoba : A Case Study in Geography of Commercial Activities*, Post-Doctoral Research Project Report, New Delhi, University Grants Commission.

: Consumer change — attitude and behaviour : The case of a developing economy, Mahoba, U.P. (India), *Trade and Society Collection of the Commission on Geography of Commercial Activities*, IGU, Proceedings, Oxford Symposium, U.K., pp. 242 - 252.

Dixit, R. S., 1990 : The betel chewers — Attitude and behaviour : The case of a developing economy, Mahoba, U.P., *The Deccan Geographer*, XXVIII, January - June, 1, 619 - 626.

: Geography of commercial activities — Progress of studies on periodic marketing in India, *IGU Regional Conference on Asian-Pacific Countries*, Vol. 2, China (Beijing).

: *Geography of Marketing and Commercial Activities in India — Documentation on Research Information*, New Delhi, Concept Publishing Company.

Dixit, R. S., 1991 : The animal market of Mahoba, U.P., *The Deccan Geographer*, XXIX, 2, July - December.

: Distribution and characteristics of permanent shops, in H. Ishihara (ed.) *Markets and Marketing in North India*, Nagoya University, pp. 11 - 22.

Dixit, R. S., 1992 : Saturday market of Mahoba — A study in market geography, *Maharashtra Geographical Journal*, 6, 2, December, pp. 31 - 40.

: Geography of commercial activities — Progress of studies on periodic marketing in India, *Indian National Geographer*, 7, pp. 1 - 32.

: *Marketing Geography in an Urban Environment*, Jaipur, Pointer Publications.

Dixit, R. S., 1996 : *National and International Level Recent Perspectives in Geographical Research*, Working Paper No. 134, Lucknow, Giri Institute of Development Studies.

: Development of marketing geography in India (1970-95), *Geographical Review of India*, Vol. 59, No. 2.

Dixit, R. S., 1997 : *Development of Marketing geography in India*, Working Paper No. 135, Lucknow, Giri Institute of Development Studies.

Dixit, R. S. & Ahmad, S., 1991 : *Location and Siting of Chikan Workers of Lucknow Metropolis,* Post-Doctoral Research Project Report, Lucknow, Council of Science and Technology, Government of U.P.

Dixit, R. S. et. Al., (eds.), 1994 : *New Dimensions in Geography and Allied Sciences*, Lucknow, The Institute of Geographers, India.

Dixit, R. S. and Bajpai, P. K., 1991 : The main study area — Sandila tehsil, Hardoi district, in Ishihara, H. (ed.), *Market and Marketing in North India, Markets and Traders in South Asia,* Series No. 4, Nagoya University, Department of Geography, pp. 1-10.

Dixit, R. S. and Bajpai, P. K., 1991 : Distribution and characteristics of permanent shops, in Ishihara, H. (ed.), *Market and Marketing in North India, Markets and Traders in South Asia,* Series No. 4, Nagoya University, Department of Geography, pp. 11-22.

Dixit, R. S. & Ishihara, H., 1990 : *Traditional Markets and Traders in the Indian Sub-Continent — The Case of North India*, Post-

Doctoral Research Project Report, Nagoya, University of Nagoya, Japan.

Dixit, R. S. & Srivastava, V. K., 1995 : *Vipnan Bhugol,* University Text Book Project Report, Bhopal Hindi Granth Academy, Government of M.P.

Dixit, R. S. & Srivastava, V. K., 1996 : *Vipnan Bhugol*, Bhopal Hindi Granth Academy, M.P. Government.

Dixit, R. S. & Verma, D. N., 1980 : Marketing geography — A bibliographic note, *Uttar Bharat Bhugol Patrika*, 16 (1), pp. 70 - 78.

1988 : An inventory of bibliographies on geography of marketing and commercial activities in India, *Geographical Review of India*, 50 (1), March, pp. 84 - 87.

F.A. O., 1973 : *Development of Food Marketing System*, Rome.

1975 : *Food Marketing System in Asian Cities*, Bangkok.

1981 : *Agricultural Marketing in Iraq*, Rome.

1986 : *Marketing Improvement in Developing World,* Rome.

Frederick, J. H., 1937 : *Agricultural Markets*, New York, Prentice Hall Inc.

Garg, V. K., 1972 : Re-orientation policy for the development of market towns, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 125 - 126.

Garnier, B. J. and Delobez., A., 1979 : *Geography of Marketing*, Longman.

Gedam, D. A., 1978 : *The Marketing System and Network in Wardha Valley,* Ph.D. Thesis, Geography Department, Nagpur University.

Geetha, T., 1977 :   *A Spatial Analysis of Periodic Markets in Krishnagiri Taluk*, M. Phil. Thesis, Faculty of Science, Madurai Kamraj University.

George, B. 1973 : Price series correlation as a measure of market integration, *Indian Journal of Agricultural Economics*, April - June.

Ghosh, A., 1963 : *Marketing Structure of Indian Agriculture*, The World Press.

Gormsen, E. (Ed.), 1985 : *Market Place Research*,   Newsletter No.15 of the IGU Working Group on Market Place Exchange Systems, Mainz, Geographisches Institut der Johannes-Gutenberg Universitat.

Government of India (Undated) : *Survey Report on Rural Market Development Program*, New Delhi.

Government of India, 1928 : *The Report of Royal Commission of Agriculture*.

Government of U.P., 1964 : *Mandi Adhiniyam,* Rajya Krishi Utpadan Mandi Parishad, U.P.

Government of U.P., 1984-85 : *Pragati Deepika*, Rajya Krishi Utpadan Mandi Parishad, U.P.

Government of U.P., 1987 : *Planning Atlas of U.P.* Department of Planning, U.P.

Government of U.P., 1989-1992 : *Mandi Vikas*, 5 vols., 1989 (April), 1990 (June-July), 1991 (September), 1992 (January), 1992 (April), 1992 (October), Rajya Krishi Utpadan Mandi Parishad, U.P.

Government of U.P., 1994 – 1996 : *Pragati Evam Karyakaram*, 3 vols. 1994 (August), 1995 (August), 1996 (August),   Rajya Krishi Utpadan Mandi Parishad, U.P.

Government of U.P., 1995-96 : *Mandi Darpan,* 2 vols. 1995 (April – June), 1996 (July-September), Rajya Krishi Utpadan Mandi Parishad, U.P.

Government of U.P., 1996 : *Jan Samanya Ko Samarpit Mandi Parishad Ka Uphar,* Rajya Krish Utpadan Mandi Parishad, U.P.

Government of U.P.,1996-98 : *Annual Diary,* 3 vols., Rajya Krishi Utpadan Mandi Parishad, U.P.

Government of U.P., 1997 : *A Study of Marketable Surplus of Selected Agricultural Crops of U.F., (1994-95),* Rajya Krishi Utpadan Mandi Parishad, U.P.

Government of U.P., (Undated) *Mandi Nideshika,* Rajya Krishi Utpadan Mandi Parishad, U.P.

Government of U.P., 1996-97 : *Uttar Pradesh Annual,* Department of Informations and Public Relations, U.P.

Government of U.P., 1996-98 : *Soochna Diary — Annual Diary,* 3 vols. Department of Information and Public Relations, U.P.

Government of U.P., 1997 : *District-wise Length of Roads in U.P. (upto March, 1994),* PWD, table 9, U.P.

Gupta, A. P., 1970 : Regulated markets in India — A review, *Indian Journal of Commerce,* XXIII, 83, June.

Hamond, and McCullagh, 1978 : *Quantitative Techniques in Geography,* Oxford, Calrindon Press, p. 270.

Harriss, B., 1974 : The role of Punjab wheat markets as growth centres, *Geographical Journal,* vol. 140, pp. 52 - 71.

Harriss, B., 1980 : Regulated foodgrain markets — A critique, *Social Scientist,* VIII, 8, March.

: Inaction, interaction, and action — Regulated agricultural markets in Tamil Nadu, *Social Scientist*, IX, 4, November.

: *Agriculture Commerce, and Rural Development in India*, Working Paper, No. 8, Madras Institute of Development Studies.

Harriss, B., 1983 : *State and Market*, New Delhi, Concept Publishing Company,

Harriss, B., 1985 : *How to Study a Market and How not to Study it*, Working Paper No. 7, Madras Institute of Development Studies.

: Market and intersectoral resource transfer, *Proceedings, International Crop Research Institute for the Semi-Arid Tropics*, Hyderabad.

Hashim, S. R., 1972 : Townsize and functions, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 127 - 135.

Hiranandani, G. J., 1965 : Regulated markets — Monetary benefits to the producer - seller, *Agricultural Marketing*, January.

Hugar, S. I., 1984 : *Spatial Analysis of Market Systems in Dharwad District*, Ph. D. Thesis, Geography Department; Karnatak University.

Hugar, S. I., 1994 : *Periodic and Non-Periodic Markets of Semi Arid Region — A Case Study of Gulbarga District*, Research Project Report, New Delhi, Indian Council of Social Science Research.

Hussain, S. A., 1937 : *Agricultural Marketing in North India*, London, George Allan and Unwin.

Ibrahim, R., 1984 : *Market Centres and Regional Development*, Delhi, B. R. Publishing Corporation.

ICRISAT, 1985 : *Agricultural Markets in the Semi-Arid Tropics*, Patancheru, Hyderabad, International Crop Research Institute for the Semi-Arid Tropics.

ICSSR, 1972 : *A Survey of Research in Geography*, Bombay, Popular Prakashan.

ICSSR, 1979 : *A Survey of Research in Geography (1969 - 72)*, New Delhi, Allied Publishers.

ICSSR, 1984 : *A Survey of Research in Geography, (1972 - 75)*, New Delhi, Concept Publishing Company.

ICSSR, 1975-93 : *ICSSR Journal of Abstracts and Reviews : Geography*, Vols. 1 - 19, New Delhi, Indian Council of Social Science Research.

IGU, 1997-98 : *International Geographical Union Study Group : Globalization of Retailing, News Bulletin*, No. 1 & 2, Paris, Department of Geography, University of Paris, 12.

Izraeli, D. et. al. (eds.), 1976 : *Agricultural Marketing in Developing Countries*, INCOMAS, Proceedings, Vol. I & II, New York, John Wiley.

Jain, A. K., 1988 : *Marketing in an Agricultural Region — A Geographical Study of Periodic Markets in Vidisa Plateau, M.P.*, Ph.D. Thesis, Geography Department, Sagar Universities.

Jain, A. K. 1993 : *Marketing in an Agricultural Region*, New Delhi, Northern Book Centre.

Jayashankar, D. C., 1984 : Marketing geography, in *A survey of Research in Geography (1972 - 1975)*, New Delhi, Indian Council of Social Science Research

Jones, W. D., 1970 : Measuring the effectiveness of agricultural marketing in contributing to economic development — Some

African examples, *Food Research Institute Studies*, Vol. 9, No. 3, pp. 175 - 196.

Jones, W. D., 1974 : Regional analysis and agricultural marketing in Tropical Africa : Concepts and experience, *Food Research Institute Studies*, Vol. 13, pp. 3 - 28.

Johnson, E. A. J., 1965 : *Market Towns and Spatial Development* in India, New Delhi, National Council of Applied Economic Research.

Johnson, E. A. J., 1972 : The integration of agrarian, commercial and industrial activities in functional economic areas, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 57 - 74.

Joshi, V. R., 1971 : *Regulated Markets in Gujrat*, Nadiad, Kaira District Cooperative Union.

Joshi, V. R., 1991 : *Regulated Markets in Gujarat*, Sardar Patel University.

Kahlon, S. S. & Kehal, H. S., 1972 : Market towns in Punjab and their impact on rural development, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 196 - 200.

Karwe, I. & Acharya, H., 1970 : *The Role of Weekly Markets in Tribal, Rural, and Urban Setting*, Project Report, New Delhi, Indian Council of Social Science Research.

Khan, N., 1988 : *Agricultural Development and Marketing*, Ph. D. Thesis, Geography Department, Aligarh Muslim University.

Khan, W., 1967 : *Market Settlements in Hyderabad Metropolitan Region*, Technical Bulletin No. 5, Hyderabad, Metropolitan Research Project Report.

Khan, W., 1972 : Market centres in Chevella Taluk — A descriptive analysis, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 192 - 195.

Kohls, R. L., 1967 : *Marketing of Agricultural Products*, London, Macmillan, p. 9.

Kulkarni, A. P., 1963 : Marketing of groundnut in some regulated markets in Maharashtra, *Arth Vigyan*, 5 (4), December.

Kulkarni, B. D., 1971 : *Functioning of Regulated Markets in Sholapur District*, Project Report, New Delhi, Indian Council of Social Science Research.

Kulkarni, B. D., 1978 : Functioning of regulated markets — Unsatisfactory, *Cooperative Perspective*, 13 (1), April-June, pp. 33 - 35.

Kulkarni, K. R., 1951 : *Agricultural Marketing in India*, 2 Vols., Bombay, Cooperative Book Depot.

Kumar, A. S., 1979 : A study of price spread of important foodgrains in two agricultural markets in Bihar, *Indian Journal of Agricultural Economics*, XXXIV, 4.

Kumavat, B. L. 1978 : *Market Towns of the Central Aravali*, Ph. D. Thesis, Geography Department, Udaipur University.

Krishna, R. 1965 : The marketable surplus functions for a subsistence crop — An analysis with Indian data, *The Economic Weekly*, February.

Krishnaswamy, L., 1975 : Behaviour of market arrivals of foodgrains in Rajasthan, *Agricultural Situation in India*, April.

Lahiri, T. B., 1972 : Development of township — Policies and problems, in NCAER (ed.) *Market Towns and Spatial*

Development, New Delhi, National Council of Applied Economic Research, pp. 136 - 138.

Lal, N., 1992 : *Marketing and Social Structure in Mirzapur Plateau*, U.P., Ph. D. Thesis, Geography Department, Gorakhpur University.

Leon, S., 1979 : *The North India Peasant Goes to Market*, Delhi, Motilal Banarsidas.

Lorenzyl, G., 1978 : *Agriculture and Food Marketing in Socio-Economic Development* — A Working Paper, German Foundation for International Development, Burlin.

Maidamwer, G. T., 1979 : *Livestock Marketing Network and System in Yavatmal District*, Ph. D. Thesis, Geography Department, Nagpur University.

Maikap, A. K., 1972 : Role of market centres in Indian economic development with special reference to West Bengal, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 183 - 186.

Marugain, P. K., 1994 : *Geographical Study of Metropolitan Weekly Markets in Delhi*, Ph. D. Thesis, Geography Department, Jamia Millia Islamia University.

Mckim, W., 1985 : Geography of commercial activities — Bibliography, 1979 - 83. In Gormsen, E. (ed.), *Market Place Research*, IGU Working Group Newsletter No. 15, Mainz, Gutenberg Universitat.

Metton, A. (Undated) : *International Guide to Scholars and Research in Commercial Geography*, France, Collection Commerce et Societe'.

Mitra, A., 1953 : *Fairs and Festivals in West Bengal*, Alipore, Government Press.

Mohanty, S. K., 1980 : *Hierarchy of Market Centres in Lower Mahanadi-Brahmani Basin*, Ph. D. Thesis, Geography Department, Utkal University.

Moyer, and Hollander, S. C. (eds.) : *Markets and Marketing in Developing Economies*, Ricgard, Illinois, D. Irwin Homewood.

Mulvihill, D. E. & Mulvihill, R. C., 1976 : *Geography, Marketing and Urban Growth*, New York, Vannostark Reinhold.

Murphy, R. E., 1961 : Marketing geography — Comes of age, *Economic Geography*, 39.

Murthy, G. N., 1988 : *Regulated Market in a Rural Economy*, Delhi, Ajanta Publications, pp. 3, 42, 83-84, 248.

Muthiah, C., 1972 : Role of regulated markets in the development process — A case study from Tamil Nadu, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 155 - 159.

Nadkarni, M. V., 1985 : The role of agricultural markets and market policy — Not conducive to rural welfare, in ICRISAT (ed.), *Agricultural Markets in the Semi-Arid Tropics*, Hyderabad, International Crop Research Institute for the Semi-Arid Tropics, pp. 243 - 250.

Narsayya, A., 1972 : *A Handbook on Regulated Markets in Warangal Region*, Warangal, Assistant Director of Marketing.

Nath, T., 1986 : *Marketing geography of Allahabad Urban Fringe*, Ph. D. Thesis, Geography Department, Gorakhpur University.

Nath, V., 1983 : *Marketing and Social Structure in North Avadh Plain*, Ph. D. Thesis, Geography Department, Gorakhpur University.

NCAER, 1965 : *Techno-Economic Survey of Uttar Pradesh*, New Delhi, National Council of Applied Economic Research.

NCAER, 1972 : *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research.

Neale, W. C., et. al., 1965 : Kurali market : A report on the economic geography of marketing in northern Punjab, *Economic Development and Cultural Change*, Vol. 13, pp..129-68.

Nolakha, R. L., 1976 : *Marketing of Handicrafts in Rajasthan*, Ph. D. Thesis, Geography Department, Rajasthan University.

Pal, M. K., 1978 : *Crafts and Craftsmen in Traditional India*, New Delhi, Kanak Publications.

Parvathi, C., 1978 : *Market Centres and Spatial Development — A Case Study of Coimbatore-Nilgiri Region*, Ph. D. Thesis, Geography Department, Mysore University.

Patil, S. P. & Pawat, J. R., 1980 : *A Study of Marketing of Fruits in Mahatona Phule Market*, Bombay, Department of Agricultural Economics, Mahatona Phule Krishi.

Prakashrao, V. L. S., 1961 : *Bhongiri — A Case Study of Market Town*, Census of India, Monongraph, No. 12, New Delhi, Registrar Census, Minister of Health.

Prasad, R., 1979 : Modernization of agricultural wholesale market as factor for economic and social development of developing economies, *Indian Journal of Regional Science*, 11(2), pp. 51 - 66.

Raja, P. K. M., 1971-72 : Regulated markets and orderly marketing, *Indian Cooperative Review*, 9.

Rajgopal, 1988 : *Micro-level Planning for Agricultural Marketing*, Delhi, Renaissance Publication.

Raju, V.T. & Bhatt, B.D., 1985 : Efficiency in pricing and operation of markets for semi-arid tropical crops in India — A case of groundnut in Gujarat, in ICRISAT (ed.), *Agricultural Markets in the Semi-Arid Tropics*, Hyderabad, International Crop Research Institute for the Semi-Arid Tropics, pp. 201.

Raju, V.T. & Oppenvon, M., 1980 : Market channels for selected crops in Semi-Arid Tropical India, in ICRISAT (ed.), *Agricultural Markets in the Semi-Arid Tropics*, Hyderabad, International Crop Research Institute for the Semi-Arid Tropics.

Raju, V. T. And Oppenvon, M., 1982 : Marketing efficiency for selected crops in the Semi-arid tropical India, in ICRISAT (ed.), *Agricultural Markets in the Semi-Arid Tropics*, Hyderabad, International Crop Research Institute for the Semi-Arid Tropics.

Ramchandran, H., 1982 : *Behaviour in Space —Rural Marketing in an Under Developed Economy*, New Delhi, Concept Publishing Company.

Ram, U., 1982 : *Periodic Markets and Rural Development in Lower Ganga-Ghaghara Doab*, Ph. D. Thesis, Geography Department, Gorakhpur University.

Rao Prabhakar, P. & Rao Rameshwara, T. 1972 : Criteria for selection of market towns in India, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 119 - 120.

Rao, R., 1959 : *Regulated Markets in India with Special Reference to Andhra Pradesh*, Ph. D. Thesis, Allahabad University.

Rao, T.V.S. & Subramanyam, E.V.R.S. (1985) : Interlocking of credit and product markets and its impact on agricultural productivity, in ICRISAT (ed.), *Agricultural Markets in the*

Semi-Arid Tropics, Hyderabad, International Crop Research Institute for the Semi-Arid Tropics, pp. 169 - 176.

Rathore, N. S., 1979 : *Regulated Markets in Rajasthan — A Critical Study in Organization and Working*, Ph. D. Thesis, Udaipur University.

Raza, M. (ed.) 1972 : *A Survey of Research in Geography (1969 - 72)*, Bombay, Popular Prakashan.

Reddy, N. V., 1972 : *Market Towns and Spatial Development* in India — A case study of Rayalseema, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 152-154.

Riley, H. M. And Webex, M.T., 1979 : *Food and Agricultural Marketing in Developing Countries* — A annotated Bibliogaphy of Doctoral Research in Social Sciences, 1969-79, Department of Agricultural Economics, Michigan State University, Working Paper, No. 5.

: *Marketing in Developing Countries*, Department of Agricultural Economics, Michigan State University, Working Paper, No. 6.

Sami, A., 1976 : *Functional Analysis of Market of Patna*, Ph. D. Thesis, Geography Department, Patna University.

Sami, A., 1980 : The geography of retailing — A conceptual review, in R. B. Mandal and V.N.P. Sinha (eds.) *Recent Trends and Concepts in Geography*, Vol. 2., New Delhi, Concept Publishing Company.

: *Intra-Urban Market Geography*, New Delhi, Concept Publishing Company.

Sarkar, A. K., 1972 : Role of market centres and regulated marketing in the development process, in NCAER (ed.)

Market Towns and Spatial Development, New Delhi, National Council of Applied Economic Research, pp. 145 - 146.

Saxena, H. M., 1971 : *Geography of Transport and Market Centres of Hadaoti Plateau*, Ph. D. Thesis, Geography Department, Udaipur University.

Saxena, H. M.,1975 : *Geography of Transport and Market Centres*, New Delhi, S. Chand and Company.

Saxena, H. M., 1977 : Marketing geography — A review, *The Deccan Geographer*, 15(1), pp. 250 - 260.

Saxena, H. M., 1980 : *Geographical Study of Market Towns of Rajasthan*, Research Project Report, New Delhi, Indian Council of Social Science Research.

Saxena, H. M., 1984 : *Geography of Marketing*, New Delhi, Sterling Publishers.

Saxena, H. M., 1990 : *Regulated Markets of Rajasthan*, Research Project Report, Indian Council of Social Science Research.

: *Marketing Geography*, Jaipur, Rawat Publications.

Saxena, H. M., 1992 : *Regulated Agricultural Markets — A Case Study of Rajasthan,* Jaipur, Rawat Publications.

Scott, P., 1970 : *Geography and Retailing.* London, Hutchinson.

Selvam, L. G., 1972 : Planning and development of market towns, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 83 - 84.

Shafi, M., 1972 : Geography of transport and marketing, in Raza, M. (ed.) *A Survey of Research in Geography*, Bombay, Popular Prakashan, 84 - 85.

Shankaraiah, A., Narasimhamurthy, G. & Hanumantharao, N., 1982 : Performance of an agricultural market committee, *Indian Journal of Marketing*, XII, 6.

Sharma, P. K., 1983 : *Market Centres in Central Assam — A Geographyical Analysis*, Ph. D. Thesis, Geography Department, Utkal University.

Singh, C. S., 1993 : *Intra-Urban Market Geography of Jabalpur City*, Ph. D. Thesis, Geography Department, Gorakhpur University.

Singh, A. J., 1972 : Location of regulated markets in Punjab, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 166 - 170.

Singh, J., 1979 : Geography of transport and marketing, in *A Survey of Research in Geography (1969 - 72)*, New Delhi, Indian Council of Social Science Research.

Singh, K. N., 1962 : Rural Markets and Rurban Centres in *Eastern U.P. — A Geographical Analysis*, Ph. D. Thesis, Geography Department, Banaras Hindu University.

Singh, L.P., 1983 : *Regulated Markets in India,* Capital Publishing House.

Singh, L. R., 1980 : *Recent Trends in Indian Geography,* Presidential Address, Silver Jubilee Session, Indian Council of Geographers.

Singh, L. R. (ed.) , 1996 : *New Frontiers in Indian Geography,* Allahabad, Geography Department, Allahabad University.

Singh, S. M., 1958 : *Rural Markets and Urban Settlements in the District of Faizabad,* M.A. Thesis, Geography Department, Banaras Hindu University.

Sinha, B. N. (ed.), 1983 : *Progress of Geographical Research in India, Transactions : Indian Council of Geographers*, 11.

Sinha, B. N. (ed.), 1984 : *Progress of Geographical Research in India, Transactions : Indian Council of Geographers*, 13.

Sinha, B. N. (ed.), 1986 : *Trends in Geographical Research in India,* Bhubaneshwar, Indian Council of Geographers.

Sinha, D.P., 1964 : *Role of Banari Inter-Tribal Market Among the Hill People of Chhota Nagpur — A Study in Cultural Change*, Ph. D. Thesis, South Illinois University.

Sinha, D. P., 1968 : *Culture Change in an Inter-Tribal Market,* Bombay, Asia Publishing House.

Sinha, M. K., 1968 : *Spatial Distribution of Retail Trade — A Case Study of Patna*, M. C. P. Thesis, Kharagpur, Indian Institue of Technology.

Sivaramprasad, A., 1979 : *Marketing in a regulated environment, Indian Journal of Marketing*, IX, 5, January.

Smith, C.A., 1976 : *Regional Analysis, Vol. 1 — Economic Systems*, New York, Academic Press.

Smith, R. H. T., 1979 : Periodic market places and periodic marketing, I, *Progress in Human Geography*, 3, 4.

Smith, R. H. T., 1979 : Periodic market places and periodic marketing, II, *Progress in Human Geography*, 4,1.

Smith, V. A., 1975 : Agricultural marketing commodities in Pichincha Equador, *Geographical Review*, vol. 65, pp. 353 - 363.

Srivastav, H. O. , 1980 : *Geography of Market Centres in Saryupar Plain*, Ph. D. Thesis, Geography Department, Gorakhpur University.

Srivastava, K. R., 1983 : *Periodic Markets and Central Places in Baghelkhand*, Ph. D. Thesis, Geography Department, Jabalpur University.

Srivastava, R. K., 1995 : *Spatial Organization of Market Centres in Faizabad District*, Ph. D. Thesis, Geography Department, Avadh University.

Srivastava, V. K., 1982 : *Geography of Market Centres in Terai Region of U.P.*, Project Report, New Delhi, Indian Council of Social Science Research.

Srivastava, V. K., 1984 : Progress of marketing geography in India, *The Indian Journal of Marketing Geography*, 2, 1-2, pp. 1 - 13.

Srivastava, V. K., 1987 : *Geography of Marketing and Rural Development,* New Delhi, Inter India, Publications.

Srivastava, V. K. (ed.) 1988 : *Commercial Activities and Rural Development in South Asia*, New Delhi, Concept Publishing Company.

Srivastava, V.K. & Dixit, R. S., 1995 : *Vipnan Bhugol*, University Text Book Project Report, Bhopal, Hindi Granth Academy, Government of Madhya Pradesh.

Srivastava, V. K. & Dixit, R. S. 1996 : *Vipnan Bhugol,* Bhopal, Hindi Granth Academy, Government of Madhya Pradesh.

Surat, R., 1986 : *Wholesale Marketing — A Study of Regulated Markets of Eastern U.P.,* Ph. D. Thesis, Geography Department, Gorakhpur University.

Swaminathan, E., 1976 : *Market Centres and Consumer Preference within Coimbatore Metropolitan Area*, Ph.D. Thesis, Geography Department, Madras University.

Talikoti, N. B., 1991 : *Spatial Organization of Periodic Market Centres in Sholapur District — A Geographical Appraisal*, Ph. D. Thesis, Geography Department, Shivaji University.

Talwar, B. P., 1972 : Market towns in Punjab, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 201 - 203.

Tamaskar, B. G., 1979 : *The Periodic Marketing System and Network in the Arvi Upland*, Research Project Report, New Delhi, University Grants Commission.

Tiwari, A. R., 1971 : *Geography of Uttar Pradesh*, New Delhi, National Book Trust, India.

Tiwari, P. S., 1973 : *Agricultural Atlas of Uttar Pradesh*, Pant Nagar, G. B. Pant, University of Agriculture and Technology.

Thomsen, F. L., 1951 : *Agricultural Marketing*, Mc Graw Hill.

Tiwari, K. N., 1987 : *Market Centres and Transport Routes — A Case Study of Ghazipur District, U.P.*, Ph. D. Thesis, Geography Department., Gorakhpur University.

Tiwari, R. C. & Tripathi, S., 1984 : Vipnan Bhugol, *Bhu-Sangam*, 2 - 1, pp. 45 - 56.

Trivedi, V., 1992 : *Periodic Markets of Indore District*, Ph. D. Thesis, Geography Department, Indore University.

Uppal, J. S., 1978 : Role of regulated markets, *Kurukshetra*, 26(7), January.

Verma, R. D., 1987, *Analysis of Periodic Market Centres of Pratapgarh District, U.P.*, Ph. D. Thesis, Geography Department, Kanpur University.

Verma, S. C., 1985, Public intervention in agricultural markets in India, in ICRISAT (ed.), *Agricultural Markets in the Semi-Arid*

458

Tropics, Hyderabad, International Crop Research Institute for the Semi-Arid Tropics, pp. 329 - 334.

Vishwanath, M. S., 1967, *A Geographical Analysis of Rural Markets and Rurban Centres in Mysore*, Ph. D. Thesis, Geography Department, Banaras Hindu University.

Vishwanath, M. S., 1972 : Establishment and development of rurban centres, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 147 - 148.

Vishwanath, V. V., 1979 : *Functional Analysis of Wholesale Marketing of Foodgrain and Vegetable Markets in Madras City*, Ph. D. Thesis, Geography Department, Madras University.

Ven Oppen, et. al., 1985 : Impact of market access on agricultural productivity in India, in ICRISAT (ed.), *Agricultural Markets in the Semi-Arid Tropics*, Hyderabad, International Crop Research Institute for the Semi-Arid Tropics, pp. 159 - 168.

Wanmali, S., 1978 : *Periodic Markets in South Bihar*, Ph. D. Thesis, Geography Department, Cambridge University.

Wanmali, S., 1979 : Periodic markets, periodic marketing, and rural development in India, *Management and Labour Studies*, 5 (1), June.

Wanmali, S., 1980 : *Periodic Markets and Rural Development in India — A Case Study of Singhbhum District*, Bihar, New Delhi, Concept Publishing Company.

Wanmali, S., 1983 : *Service Provision and Rural Development in India — A Case Study of Mriyal Guda Taluk*, Research Project Report No. 37, Washington, D. C., International Food Research Institute.

Warrior, S. K., 1972 : Some problems of a public marketing agency and their impact on the marketing development programme, in NCAER (ed.) *Market Towns and Spatial Development*, New Delhi, National Council of Applied Economic Research, pp. 75 - 78.

Yadav, R. S., 1986 : *Market Centres of Rajasthan Canal Region*, Ph. D. Thesis, University of Rajasthan.

Yasin, G., 1976 : *Marketing of Agricultural Products in Punjab*, Lahore, Punjab Board of Economy Inquiry.

APPENDICES

APPENDIX 1 : SURVEY SCHEDULES

SCHEDULE I : REGULATED MARKET (MANDI) INFORMATION

1. (I) Name   :

(ii) Location   : Middle of town/outside the town (with distance)

2. Date of Establishment   :

3. Weekly Periodicity with days   : _____ Weekly Closure _____

4. Mandi Samiti Set-up   : Complete/ Incomplete

5(I) Names of Village from where the farmers come (with distance)   :

(ii) Major Crops of Market Area   :

6. Sub-yards   :

7. Road Link   : Km _____ Metallled/Unmetalled

8. (I) New Yard Construction   :

(ii) Date of Shifting from old to new site   :

9. New Yard Buildings/Structures   :

(i)No. Of shops (with size type)   :

(ii) No. Of Auction Platforms (with size)   :

(iii) No. Of stores (with size)   :

(iv) Other Buildings   : PO/Bank/Canteer./Rest House/ Cattleshed/Water Hut/Police Out-Post

10.Attendance

(I) Peak-time   :

(ii) Ordinarily   :

(iii) No. Of Regd. Traders   : _____Agents _____

11. Facilities Available for farmers

(I) Kisan Bazar :

(ii) Grading unit :

(iii) Weighing Scale :

(iv) Moisture Meter :

12. Commodity Structure :

(Mandi Classification-wise)

13. Yearly Income : Heads with Income Mandi Fees

@ Rs. _____ per _____

paid by _____

Grading

Weighing

Agent/Aratia

Storage

Heads with Expenses

14. Payment Procedure : Cash on Spot/Through Mandi Office/ Coupen/Agent

15. Crop Arrivals : Moisture Metre

16. New Schemes : Name (with Establishment year and working/ closing days) :

17. Inspection : Regularly done/Not done (duration)

18. Problems and : Suggestions

Signature of Investigator

SCHEDULE II : FARMER (PRODUCER/ SELLLER) INFORMATION

1. Name and Address   :

2. Caste and Education   :

3. Distance from village to main   :
yard

4. Link Road Nature   :

5. (I) Mode of Transport to Mandi   :

(ii) Time/Duration/Cost   :

6. Sub Yard   :

7. Weekly Market   :

8.   Preference/Choice   for   this   :
(reason)

9. Yards visits (seasonwise)   : Regular/Irregular : No. Of Visits

Other yards, if any visited   :

10 (I) Land Holding   : Total Area :

Net Area Sown :

(ii) Crops Grown   : Area Irrigated :

Unirrigated :

Major/Minor :

Food Crops :

11. Factors affecting the sale : Family Needs/ Higher Prices/
decisions   Indebtedness/ Lack of storage

12. Problems and Suggestions

Date : ....   Signature of Investigator

Schedule III : Trader-Purchaser Information

1. Name and Address   :

2. Caste and Education   :

3. Area/Place of stay   :

4. Location of shop   :

5. Distance travelled in km. And : nature of link road

6. (I) Mode of Transport to Mandi   :

(ii) Time/Duration/Cost   :

7. Yard Visits   : Regular/Irregular

(I) No of visits (seasonwise)   :

8. Types / and of Amounts of Fees : paid

9. Commodities of Business   :

10. Benefits   :

11. Trade Unions

12. Problems and Suggestions

Date ....   Signature of Investigator

APPENDIX 2 : U.P. : BASIC STATISTICS — DISTRICT LEVEL

District	RAM No.	Area (km²)	Pop. ('000)	Village No.	Ram per 100 km²	Road-Length (km) per km²	Marketable Surplus ('000 m.t)	Marketed Surplus ('000 m.t.)
1. Uttar Kashi	1	8016	240	678	.01	16.18	7.00	-
2. Dehradun	4	3088	1026	746	.13	46.60	13.75	6.32
3. Tehri Garhwal	1	4421	580	1959	.02	32.59	10.70	-
4. Pauri Garhwal	1	5438	683	3205	.02	40.91	14.00	0.88
5. Chamoli	1	9126	455	1569	.01	15.00	7.00	-
6. Pithoragarh	1	8856	566	2186	.01	15.13	70.38	-
7. Almora	1	5385	837	3024	.02	57.70	18.69	-
8. Nainital	9	6794	1540	1799	.13	43.93	433.98	1056.11
9. Saharanpur	8	3689	2309	1278	.23	52.07	217.56	129.65
10. Hardwar	3	2360	1124	503	.13	42.54	23.60	27.38
11. Muzaffanagar	7	4008	2843	886	.17	78.09	138.70	20.80
12. Meerut	5	3911	3448	900	.13	76.76	171.18	113.10
13. Ghaziabad	4	2590	2704	685	.15	65.48	115.43	30.60
14. Bullandshahr	11	4352	2850	1359	.24	55.40	685.20	170.97
15. Bijnor	7	4561	2455	2132	.15	55.73	154.72	28.90
16. Moradabad	7	5067	4121	2475	.12	43.99	484.16	236.29
17. Rampur	3	2367	1502	1098	.13	64.46	504.88	289.63
18. Budaun	8	5168	2448	1780	.15	35.78	568.86	248.13
19. Bareilly	3	4120	2835	1851	.07	52.72	308.41	610.12
20. Pilibhit	3	3499	1283	1210	.09	38.41	503.49	395.72
21. Shahjahanpur	4	4575	1987	2130	.09	29.68	783.13	804.58
22. Aligarh	6	5019	3296	1706	.12	62.46	698.86	199.54
23. Mathura	3	3811	1931	871	.08	58.28	534.03	100.82

24. Agra	8	4027	2751	904	.20	50.73	312.73	31.16
25. Etah	5	446	2245	1507	.11	56.14	439.28	150.27
26. Firozabad	4	2361	1533	795	.17	39.47	260.30	33.28
27. Mainpuri	3	2760	1317	826	.11	42.17	386.90	162.91
28. Etawah	6	4326	2125	1461	.14	46.65	455.68	219.16
29. Farrukhabad	6	4274	2440	1571	.14	45.06	367.62	69.94
30. Kanpur Dehat	6	5111	2138	1622	.12	46.97	519.38	86.20
31. Kanpur Nagar	1	1965	2418	247	.09	57.93	7.61	6.59
32. Kheri	6	7080	2419	1712	.09	28.40	462.23	436.48
33. Hardoi	5	6086	2747	1883	.08	36.38	535.03	249.38
34. Sitapur	7	5743	2857	2314	.12	38.09	294.18	176.51
35. Unnao	3	4358	2200	1693	.07	37.08	275/32	70.90
36. Lucknow	2	2528	2763	824	.08	68.35	2.00	45.98
37. Raibareli	5	4609	2323	1737	.11	50.99	266.62	102.11
38. Bahraich	6	6877	2764	1890	.09	27.61	383.83	167.97
39. Barabanki	3	4402	2423	2050	.07	45.09	371.81	123.69
40. Gonda	7	7352	3573	2818	.10	35.01	490.05	183.57
41. Faizabad	3	4511	2978	2647	.07	48.57	414.48	119.15
42. Sultanpur	2	4436	2559	2495	.05	56.15	244.64	91.19
43. Basti	1	5733	2739	4504	.03	52.98	407.21	66.64
44. Siddharthnagar	4	5495	1708	2437	.11	30.44	312.59	104.64
45. Gorakhpur	3	5524	3066	2880	.09	33.78	240.70	40.63
46. Maharajganj	4	2948	1676	1207	.14		417.69	96.37
47. Deoria	2	5445	4440	3550	.04	66.89	382.53	6.99
48. Jaunpur	3	4038	3215	3269	.07	67.36	286.39	9.24
49. Azamgarh	1	4234	3154	3721	.02	55.71	358.81	3.17
50. Mau	2	13	1446	1472	.12	56.33	148.06	2.04

51. Ballia	4	2981	2262	1792	.13	71.42	208.34	15.24
52. Fatehpur	5	4152	1899	1352	.12	36.84	254.73	70.07
53. Pratapgarh	1	3717	2211	2181	.03	66.88	183.00	27.22
54. Allahabad	5	7261	4921	3539	.07	45.68	290.00	55.55
55. Varanasi	3	5092	4861	3702	.06	72.90	261.27	20.70
56. Ghazipur	4	5377	2417	2583	.12	67.81	265.34	16.23
57. Mirzapur	2	4522	1657	1722	.04	34.96	243.11	8.96
58. Sonbhadra	2	6788	1075	1346	.03	12.96	90.21	17.38
59. Lalitpur	2	5039	752	689	.04	23.89	173.28	51.34
60. Jhansi	6	5024	1430	760	.12	41.26	118.73	42.50
61. Jalaun	7	4565	1219	942	.15	37.76	137.67	73.14
62. Hamirpur	7	766	1466	926	.10	23.47	200.31	85.00
63. Banda	5	5024	1862	1204	.07	24.37	310.78	93.43

Source : Column 1 – 4, Census of India, 1991; Column 6 , PWD, U.P. (1995),;

Columns 7-8, Mandi Parishad, U.P. (10 major crops data for 1994-95)

APPENDIX 3 : U.P. REGULATED AGRICULTURAL MARKETS —
WEIGHTAGE SCORE, C. I. VALUE, HIERARCHICAL ORDER

Division/ District/RAM	Score on Parameters (Out of Max. 1.00 in each Case)								C.I. Value	Order
	1	2	3	4	5	6	7	8		
1. GARHWAL										
1. Uttarkashi										
1. Uttarkashi	.5	0	0	-	.4	.25	.8	.2	45.62	III
2. Dehradun										
2. Chakrata	.5	0	.4	1	.2	.25	.8	.2	36.87	III
3. Vikas Nagar	1	0	0	1	.4	.25	.8	.2	45.62	III
4. Dehradun	1	.5	1	1	1	.75	.8	.8	78.12	I
5. Rishikesh	1	.5	0	1	.8	.5	.8	.6	65.00	II
3. Tehri Garhwal										
6. Tehri Garhwal	.5	0	0	-	.6	.25	.6	-	24.37	III
4. Pauri Garhwal										
7. Kotdwar	.5	0	.2	1	.6	.5	.6	.2	38.75	III
5. Chamoli										
8. Chamoli	.5	0	0	-	.4	.25	.2	-	16.87	III
2. KUMAON										
6. Pitthoragarh										
9. Pithoragarh	.5	0	0	1	.6	.25	.4	-	34.37	III
7. Almora										
10. Almora	.5	0	0	1	.6	.25	.8	-	39.37	III
8. Nainital										
11. Ramnagar	1	.5	.6	1	.6	.5	.6	.6	67.50	II
12. Haldwani	1	1	.8	1	1	1	.6	1	92.50	I
13. Kashipur	1	1	.6	1	.8	1	.6	1	87.50	I
14. Bajpur	1	1	.4	1	.4	.5	.6	.4	66.25	II
15. Gadarpur	1	.5	.2	1	.2	.75	.6	.6	60.62	II
16. Rudrapur	1	1	.6	1	.8	1	.6	1	87.50	I
17. Kichha	1	1	0	1	.6	.75	.6	1	75.37	I
18. Sitarganj	1	1	.6	1	.4	.75	.6	.8	76.87	I
19. Khatima	1	1	.4	1	.4	.75	.6	1	76.87	I
3. MEERUT										

9. Saharanpur

20. Sultanpur-Chilkana	.5	0	.2	1	.4	.25	.8	.2	40.62	III
21. Chutmalpur	.5	0	.2	1	.2	.25	.8	.2	39.37	III
22. Nakur	.5	0	.4	1	.4	.25	.8	.8	49.87	III
23. Saharanpur	1	1	0	1	1	1	.8	1	85.00	III
24. Gangoh	.5	.5	0	1	.6	.5	.8	.4	53.75	I
25. Nanauta	.5	0	.2	1	.4	.25	.8	.2	40.62	II
26. Rampur-Maniharan	1	0	0	1	.6	.25	.8	.2	48.12	III
27. Deoband	.5	0	0	1	.8	.25	.8	.4	48.87	III

10. Hardwar

28. Mangalore	1	0	1	1	.6	.75	.6	.6	69.37	II
29. Roorkee	.5	0	.2	1	.8	.25	.6	.2	44.37	III
30. Hardwar Union	.5	.5	.2	1	1	.5	.6	.4	58.75	II

11. Muzaffarnagar

31. Thana Bhawan	.5	0	.2	1	.6	.25	1	.2	48.87	III
32. Shamli	1	.5	.2	1	.8	.75	1	.4	70.62	II
33. Kairana	1	0	0	1	.8	.25	1	.2	48.12	III
34. Kandhla	.5	0	.2	1	.6	.25	1	.2	48.87	III
35. Shahpur	.5	0	.2	1	.4	.25	1	.4	48.87	III
36. Muzaffarnagar	1	1	.2	1	1	1	1	1	90.00	I
37. Khatauli	1	1	.4	1	.6	1	1	.6	74.25	II

12. Meerut

38. Baraut	1	.5	.4	1	.8	.5	1	.4	70.00	II
39. Khekra	1	0	.4	1	.6	.25	1	.2	55.62	II
40. Sardhana	1	0	0	1	.6	.25	1	.4	50.00	III
41. Meerut	1	0	0	1	1	1	1	1	75.12	I
42. Mawana	.5	0	.4	1	.8	.25	1	.4	54.37	II

13. Ghaziabad

43. Muradnagar	1	0	.4	1	.6	.25	1	.2	55.62	II
44. Ghaziabad/Shahibada	1	0	0	1	1	.75	1	1	71.87	II
45. Dadri	1	0	0	1	.6	.25	1	.2	50.00	III
46. Hapur	1	1	.4	1	1	1	1	1	92.50	I

14. Bullandshahr

47. Gulawati	1	0	0	1	.6	.25	.8	.2	48.12	III
48. Siana	.5	0	0	1	.6	.5	.8	.2	45.00	III
49. Sikandarabad	.5	0	.2	1	.8	.5	.8	.4	49.50	III

50. Dankaur	.5	0	0	1	.2	.25	.8	.2	36.87	III
51. Bullandshahr	1	0	.2	1	1	.75	.8	.6	66.87	II
52. Jahangirabad	1	1	.2	1	.6	.5	.8	.4	63.75	II
53. Anupshahr	.5	0	.2	1	.4	.25	.8	.4	44.37	III
54. Jewar	.5	0	.4	1	.6	.25	.8	.2	46.87	III
55. Khurja	.5	0	0	1	.8	.5	.8	.4	50.00	III
56. Shikarpur	1	0	.2	1	.6	.25	.8	.2	50.00	III
57. Debai	1	0	0	1	.6	.5	.8	.4	50.00	III

4. MORADABAD

15. Bijnor

58. Nazibabad	1	.5	2	1	.8	.5	.8	.6	67.50	II
59. Kiratpur	1	.5	.4	1	.6	.25	.8	.4	61.87	II
60. Nagina	1	0	.2	1	.8	.25	.8	.2	50.00	III
61. Bijnor	.5	0	.4	1	.8	.25	.8	.2	49.37	III
62. Dhampur	.5	.5	.6	1	.6	.5	.8	.8	61.25	II
63. Haldaur	1	0	0	1	.4	.25	.8	.2	45.62	III
64. Chandpur	1	0	.4	1	.8	.5	.8	.6	63.75	II

16. Moradabad

65. Dhanaura	1	0	.2	1	.4	.25	.6	.4	48.12	III
66. Amroha	1	.5	.2	1	1	.5	.6	.6	67.50	II
67. Hasanpur	1	0	.4	1	.6	.5	.6	.4	68.12	II
68. Moradabad	1	1	.8	1	1	1	.6	1	92.50	I
69. Sambhal	1	0	0	1	1	.75	.6	.8	64.37	II
70. Bahjoi	1	.5	0	1	.6	.5	.6	.4	57.50	II
71. Chandausi	1	1	0	1	.8	.75	.6	.6	71.87	II

17. Rampur

72. Rampur	.5	0	1	1	1	1	1	.8	73.95	II
73.Bilaspur	.5	0	.4	1	.6	1	1	.8	66.12	II
74. Shahabad	.5	0	0	1	.6	.25	1	.2	44.37	III

5. BAREILLY

18. Budaun

75. Babrala	1	0	0	1	.2	.25	.6	.2	40.62	III
76. Bisauli	1	0	0	1	.6	.25	.6	.2	45.62	III
77. Sahaswan	1	0	.6	1	.8	.25	.6	.4	58.12	II
78. Bilsi	1	.5	0	1	.4	.5	.6	.4	55.00	II
79. Wazirganj	1	0	0	1	.4	.25	.6	.2	43.12	III

80. Ujhani	1	1	0	1	.6	.75	.6	.6	69.37	II
81. Budaun	1	.5	.2	1	1	.5	.6	.4	65.00	II
82. Dataganj	1	0	.2	1	.4	.25	.6	.2	43.12	III

19. Bareilly

83. Baheri	1	0	.2	1	.6	.75	.8	1	66.87	II
84. Aonla	1	0	.4	1	.6	.25	.25	.2	40.62	III
85. Bareilly	1	1	1	1	1	1	.8	1	97.50	I

20. Pilibhit

86. Pilibhit	1	.5	.6	1	1	1	.6	1	83.95	I
87. Bisalpur	1	0	.6	1	.6	.75	.6	.8	66.87	II
88. Puranpur	1	0	.2	1	.6	1	.6	1	67.50	II

21. Shahjahanpur

89. Pawayan	1	.5	1	1	.4	1	.4	1	73.25	II
90. Tilhan	.5	0	.4	1	.6	.5	.4	.5	50.00	III
91. Shahjahanpur	1	1	0	1	1	1	.4	1	80.00	I
92. Jalalabad	1	0	.4	1	.6	.5	.4	.4	50.00	III

6. AGRA

22. Aligarh

93. Khair	1	.5	.4	1	.6	.5	1	.4	67.50	II
94. Atrauli	1	.5	0	1	.6	.25	1	.2	56.87	II
95. Chharra	1	.5	.2	1	.4	.75	1	.4	65.62	II
96. Aligarh	1	.5	.2	1	1	1	1	1	83.75	I
97. Hathras	1	.5	.8	1	1	1	1	1	91.25	I
98. Sikandararau	1	0	.6	1	.6	.5	1	.2	58.75	II

23. Mathura

99. Kosi Kalan	1	.5	.8	1	.6	.5	.8	.4	57.50	II
100. Mathura	1	1	.8	1	1	1	.8	.8	92.50	I
101. Sadabad	.5	0	0	1	.6	.25	.8	.2	41.87	III

24. Agra

102. Achhnera	1	0	.2	1	.4	.25	.8	.2	48.12	III
103. Agra	.5	0	.2	1	1	1	.8	1	68.75	II
104. Fatehpur Sikri	1	0	0	1	.6	.25	.8	.2	48.12	III
105. Jagner	1	0	.4	1	.2	.25	.8	.2	48.12	III
106. Khairagarh	1	0	.6	1	.4	.5	.8	.2	56.25	II
107. Samsabad	.5	0	0	1	.4	.25	.8	.4	41.87	III
108. Fatehabad	.5	0	.2	1	.4	.25	.8	.2	41.87	III

138. Pukhrayan	1	0	.4	1	.4	.5	.8	.2	50.00	III
139. Baripal	1	.5	.6	1	.2	.25	.8	.2	56.87	II
31. Kanpur Nagar										
140. Kanpur	1	.5	.4	1	1	1	.8	1	83.75	I
8. LUCKNOW										
32. Kheri										
141. Palia Kalan	1	5	.8	1	.6	.75	.4	.8	73.12	II
142. Tikonia	.5	0	.6	1	.2	.5	.4	.2	42.50	III
143. Golagokarn Nath	.5	.5	.6·	1	.6	1	.4	.8	67.50	II
144. Mohammadi	1	.5	0	1	.6	.5	.4	.4	55.00	II
145. Maigalganj	.5	.5	.4	1	.2	.25	.4	.2	43.12	III
146. Lakhimpur	1	1	.2	1	.8	1	.4	1	80.00	I
33. Hardoi										
147. Shahabad	1	.5	.6	1	.8	.5	.6	.4	67.50	II
148. Hardoi	1	.5	.2	1	.8	1	.6	.8	73.75	II
149. Sandi	.5	0	0	1	.6	.25	.6	.2	39.37	III
150. Madhoganj	1	.5	.6	1	.2	.25	.6	.4	56.87	II
151. Sandila	1	.5	.4	1	.6	.5	.6	.4	62.50	II
34. Sitapur										
152. Hargaon	.5	0	.6	.4	.4	.25	.6	.2	36.87	III
153. Maholi	.5	0	0	1	.4	.25	.6	.2	36.87	III
154. Sitapur	1	.5	.2	1	1	1	.6	1	78.75	I
155. Misrikh	.5	0	0	1	.4	.25	.6	.2	36.87	III
156. Biswan	.5	0	.2	1	.6	.5	.6	.6	50.00	III
157. Siddhauli	.5	0	.2	.4	.4	.25	.6	.2	31.87	III
158. Mehmoodabad	.5	0	0	1	.6	.5	.6	.4	45.00	III
35. Unnao										
159. Bangarmau	1	0	.2	1	.6	.5	.6	.4	50.00	III
160. Unnao	.5	0	.4	1	1	.25	.6	.2	49.37	III
161. Purwa	1	0	.2	.4	.4	.25	.6	.2	38.12	III
36. Lucknow										
162. Banthara	.5	0	.4	.4	.2	.25	1	.6	41.87	III
163. Lucknow	1	.5	.6	1	1	1	1	1	88.75	I
37. Raebareli										
164. Bachrawan	.5	0	.6	1	.2	.25	.8	.2	44.37	III
165. Lalganj	1	0	.8	1	.4	.25	.8	.4	58.12	II

166. Raebareli	1	.5	.6	1	1	.5	.8	.4	72.50	II
167. Jais	1	0	.2	1	.6	.5	.8	.4	56.25	II
168. Salon	.5	0	0	1	.4	.25	.8	.2	39.37	III

9. FAIZABAD

38. Bahraich

169. Mihipurwa	.5	0	0	1	.2	.25	.4	.2	31.87	III
170. Rupaidiha	.5	0	.2	1	.2	.25	.4	.2	34.37	III
171. Nanpara	1	0	0	1	.6	.25	.4	.2	43.12	III
172. Risia	.5	0	.2	1	.2	.25	.4	.2	34.37	III
173. Bahraich	1	1	.2	1	1	1	.4	.8	80.00	I
174. Payagpur	.5	0	0	1	.2	.25	.4	.2	31.85	III

39. Barabanki

175. Barabanki	.5	0	.2	1	.8	.75	.8	1	63.12	II
176. Safdarganj	1	0	.6	1	.2	.5	.8	.4	56.25	II
177. Rudauli	.5	0	.2	1	.6	.5	.8	.2	47.50	III

40. Gonda

178. Tulsipur	1	0	0	1	.4	.25	.6	.2	43.12	III
179. Pachperwa	.5	0	0	1	.4	.25	.6	.2	36.87	III
180. Balrampur	.5	.5	0	1	.8	.5	.6	.4	53.75	II
181. Utraula	.5	0	0	1	.6	.25	.6	.2	39.37	III
182. Colonelganj	.5	0	0	1	.6	.25	.6	.4	41.87	III
183. Gonda	.5	0	0	1	.8	.75	.6	.4	50.00	III
184. Nawabganj	.5	0	.2	1	.4	.5	.6	.4	45.00	III

41. Faizabad

185. Faizabad	1	0	.4	1	1	.75	.8	.8	71.87	II
186. Tanda	.5	0	1	.8	.8	.25	.8	.2	44.37	III
187. Akbarpur	.5	0	.6	1	.6	.75	.8	.4	58.12	II

42. Sultanpur

188. Jafarganj	1	.5	0	1	.2	.5	.8	.4	55.00	II
189. Sultanpur	1	.5	.4	1	.8	.5	.8	.4	67.50	II

10. GORAKHPUR

43. Basti

190. Basti	1	0	.4	1	.8	.75	.8	.4	64.37	II

44. Siddharthnagar

191. Bansi	.5	0	.2	1	.6	.25	.6	.2	41.87	III
192. Naugarh	.5	0	.2	1	.2	.25	.6	.2	36.87	III

193. Sahiapur	.5	0	.6	1	.2	5	.6	.4	47.50	III
194. Shoharatgarh	.5	0	.2	1	.2	.25	.6	.2	36.87	III

45. Gorakhpur

195. Shahjanwan	1	0	.4	1	.2	.25	.6	.2	45.62	III
196. Gorakhpur	1	0	.8	1	1	1	.6	1	80.00	I
197. Chauri-chaura	1	.5	.2	1	.2	.25	.6	.2	46.87	III

46. Mahrajganj

198. Partawal	1	.5	.4	1	.2	.5·	.6	.4	57.50	II
199. Anandnagar	1	.5	.2	1	.2	.25	.6	.6	49.37	III
200. Garaura	.5	0	.6	.2	.4	.25	.6	.2	34.37	III
201. Nautanwa	1	.5	.4	1	.6	.25	.6	.2	56.87	II

47. Deorla

202. Barhaj Bazar	.5	0	1	1	.6	.5	1	.4	62.50	II
203. Tamkuhi Road	.5	0	.2	1	.2	.5	.4	.2	47.50	III

11. Azamgarh

48. Jaunpur

204. Mungrabad-shahpur	1	0	.2	1	.4	.25	1	.2	50.00	III
205. Jaunpur	1	0	.8	1	1	.5	1	.6	73.75	II
206. Shahganj	1	.5	.6	1	.4	.5	1	.2	65.00	II

49. Azamgarh

207. AZAMGARH	1	0	.8	1	.8	.5	.8	.2	63.75	II

50. Mau

208. Dohrighat	.5	0	.6	1	.2	.25	.8	.2	44.37	III
209. Kopaganj	.5	0	.4	1	.6	.25	.8	.2	46.87	III

51. Balia

210. Belthara Road	1	0	.2	1	.4	.25	1	.2	50.00	III
211. Chitbaragaon	.5	0	0	1	.4	.25	1	.2	41.87	III
212. Rasra	.5	0	0	1	.6	.25	1	.2	44.37	III
213. Ballia	1	0	1	1	.8	.75	1	.4	75.12	I

12. ALLAHABAD

52. Fatehpur

214. Jehanabad	.5	0	.4	1	.4	.25	.6	.2	41.87	III
215. Bindki	.5	0	.4	1	.6	.5	.6	.4	50.00	III
216. Fatehpur	ʻ	0	.2	1	1	.25	.6	.2	53.12	III
217. Khaga	.5	0	.2	1	.2	.25	.6	.2	36.87	III
218. Kishunpur	1	0	.4	1	.2	.25	.6	.2	45.62	III

53. Pratapgarh

219. Pratapgarh	1	.5	.8	1	.8	.5	1	.4	75.00	I

54. Allahabad

220. Ajuha	1	0	0	1	.4	.25	.8	.2	45.62	III
221. Bharwari	1	0	0	1	.4	.25	.8	.2	45.62	III
222. Allahabad	1	.5	1	1	1	1	.8	1	91.25	I
223.Jasra	1	0	1	1	.2	.25	.8	.2	55.62	II
224. Sirsa	.5	0	1	1	.2	.25	.8	.2	49.37	III

13. VARANASI

55. Varanasi

225. Varanasi	1	.5	.8	1	1	1	1	1	91.25	I
226. Chandauli	.5	0	1	1	.4	.25	1	.2	54.37	II
227. Gopiganj	1	0	.4	1	.4	.5	1	.2	56.25	II

56. Ghazipur

228. Saidpur	.5	0	.4	1	.4	.25	1	.2	46.87	III
229. Jangipur	1	0	.6	1	.2	.5	1	.4	58.75	II
230. Yusufpur	1	0	.4	1	.2	.25	1	.2	50.00	III
231. Zamania	.5	0	.4	1	.6	.25	1	.2	49.37	III

57. Mirzapur

232. Ahraura	1	0	.2	1	.4	.25	.6	.2	45.62	III
233. Mirzapur	1	0	0	1	1	.25	.6	.2	50.00	III

58. Sonbhadra

234. Robertsganj	1	1	.4	1	.6	.5	.2	.2	61.25	I
235. Dudhi	1	0	.2	1	.2	.5	.2	.4	43.75	III

14. JHANSI

59. Lalitpur

236. Mehraoni	1	.5	.2	1	.2	.25	.4	.2	46.87	III
237. Lalitpur	1	1	.6	1	.8	1	.4	.6	80.00	I
238. Jhansi	1	1	0	1	1	1	.6	.4	76.00	I

60. Jhansi

239. Baruasagar	.5	0	0	1	.4	.25	.6	.2	36.87	III
240. Chirgaon	1	1	0	1	.4	.5	.6	.2	58.75	II
241. Maurampur	1	1	.2	1	.6	.75	.6	.2	66.87	II
242. Gurusarai	1	.5	.6	1	.4	.75	.6	.2	60.00	II
243. Month	1	1	.6	1	.4	.5	.6	.2	66.25	II

61. Jalaun

	1	2	3	4	5	6	7	8		
244. Konch	1	1	.4	1	.6	.75	.6	.4	71.87	II
245. Ait	1	.5	.6	1	.2	.5	.6	.2	57.50	II
246. Orai	1	1	0	1	.8	1	.6	.6	75.00	II
247. Madhogarh	1	0	.2	1	.2	.25	.6	.2	43.12	III
248. Jalon	1	1	0	1	.6	.5	.6	.2	61.25	II
249. Kalpi	1	.5	0	1	.6	.25	.6	.2	50.00	III
250. Kadaura	1	0	0	.4	.4	.25	.6	.2	35.62	III
62. Hamirpur										
251. Kurara	1	0	.2	1	.2	.25	.4	.2	46.62	III
252. Bharwa-sumerpur	.5	0	.2	1	.4	.5	.4	.2	40.00	III
253. Rath	1	1	.2	1	.6	.75	.4	.4	66.87	II
254. Maudaha	1	1	.4	1	.6	.75	.4	.4	69.37	II
255. Panwari	.5	0	0	1	.2	.25	.4	.2	31.87	III
256. Charkhari	1	0	.8	1	.6	.5	.4	.2	55.62	II
257 Mahoba	.5	0	.4	1	.8	.5	.4	.2	47.50	III
63. Banda										
258. Banda	1	.5	.2	1	.8	.5	.4	.2	45.00	III
259. Baberu	1	.5	0	1	.4	.5	.4	.2	50.00	III
260. Atarra	1	.5	.6	1	.6	.5	.4	.4	62.50	II
261. Karwi	1	.5	.2	1	.2	.5	.4	.2	50.00	III
262. Mau	.5	0	.2	1	.2	.25	.4	.2	34.37	III

1 = Market Site; 2. = Modern Facilities ;　　3 = Sub-yard;　　4 = Periodicity;

5 = Population;　6 = Market Fees;　　　　7 = Road Length; 8 = Market Arrivals

APPENDIX 4 : REGULATED AGRICULTURAL MARKET LUCKNOW
CROP ARRIVAL — JULY 1997- JUNE 1998

Crop	Quintals		
	Primary	Secondary	Total
Paddy	2,62,167	61,772	3,23,939
Rice	4,065	46,246	50,311
Jowar	-	452	452
Bajra	104	1,622	1,726
Maize	5,835	19,586	25,421
Wheat	1,02,343	3,62,353	4,64,678
Barley	906	-	906
Bejhar	-	-	-
Jaai	3,827	321	4,148
Total : Cereals	**3,79,247**	**4,92,534**	**8,71,781**
Urd	309	40,061	40,370
Moong	-	3,395	3,395
Gram	835	33,749	34,584
Pea	229	18,302	18,531
Arhar	2,528	48564	24,540
Mansoor	5,654	18,886	24,540
Lobia (seed)	--	255	255
Soyabean	497	7	504
Dhaicha	-	-	-
Gwar	-	-	-
Sanai	-	-	-
Total : Pulses	**10,052**	**1,63,219**	**1,73,271**
Peanut	2	42,069	42,071
Til	737	1,254	1,991
Lahi	1,655	20,659	22,314
Alsi	31	-	31
Andi	-	-	-
Sehua (seed)	-	-	-
Mahua (seed)	-	-	-
Gullu	-	1,636	1,636
Varr or Kusum (seed)	-	-	-

Coconut	-	16,132	16,132
Sunflower	124	-	124
Total : Oilseeds	**2,549**	**81,453**	**84,002**
Jins	8	9	10
Cotton	-	1440	1440
Jute	-	-	-
Sanai	-	-	-
Patsan	-	-	-
Dhaicha	-	-	-
Ram Baans	-	-	-
Mesoora	-	-	-
Total : Fibrous crops	**-**	**1440**	**1440**
Tobacco	-	9613	9613
Total : Inhailer	**-**	**9613**	**9613**
Coriander	5	9,871	9876
Red Chilli	-	25883	25883
Menthi	-	1,223	1,223
Turmeric	-	16,153	16,153
Mango Powder	-	3,373	3,373
Total : Spices	**5**	**56,503**	**56,508**
Gur	21	3,882	3903
Khandsari	-	7,822	7,822
Poppy	-	-	-
Mahua (flower)	-	-	-
Rab	-	961	961
Sugar	-	-	-
Jaggery	-	-	-
Makhana	-	750	750
Pippermint	-	-	-
Total : Others	**21**	**13,415**	**13,436**
Total : Agricultural Produce	**3,91,874**	**8,18,177**	**12,10,051**
Potato	6,99,019	1,63,335	8,62,354
Onion	11,305	40,526	51,831
Garlic	1,231	56	1,287
Arbi	1,942	4116	6,058
Ginger	544	7707	8,251

Green Chilli	1,657	2,560	4,317
Tomato	828	18,403	19,231
Band Gobhi	2,878	6,862	9,740
Carrot	2,281	-	2281
Radish	2,625	-	2,625
Brinjal	3,656	121	3,477
Tinda	50	68	118
Jins	8	9	10
Gourd	2427	620	3047
Green pea	4369	2067	6436
Parwal	260	9101	9361
Jack fruit (Kuccha)	2403	1,266	10,660
Cucumber	1521	-	1521
Paitha	25	-	25
Lady-finger	2,333	3,474	5807
Pumpkin	5365	-	5365
Bitter Gourd	619	1,634	2253
Sweet Potato	43	2,812	2855
Total : Vegetables	**7,59,918**	**2,60,873**	**10,20,791**
Lemon	292	24,480	24,772
Orange	-	37912	37912
Moussmi	-	86,140	86,140
Malta	-	86,140	86,140
Grapefruit	-	-	-
Bannana	-	2,63,001	2,63,001
Pomgranet	-	15,306	15,306
Musk melon	3,685	-	3,685
Water melon	8,553	10	8,563
Pappaya	820	3,510	4,330
Apple	-	36,420	36,420
Gauva	1,817	1,016	2,833
Plum	150	-	150
Aonla	20	549	569
Lichi	-	4570	4570
Cheeku	-	232	232
Aaru	-	78	78
Locat	-	-	-

Mango	4,60,760	2,107	4,62,867
Jack fruit	-	-	-
Apricot	-	207	207
Pear	85	7,995	8080
Citron	-	-	-
Total : Fruits	**4,77,198**	**4,83,205**	**9,60,403**
Total : Horticulture Produce	**12,37,116**	**7,44,078**	**19,81,194**
Grapes	-	15,332	15,332
Total : Grape Cultivation	**-**	**15,332**	**15,332**
Jins	8	9	10
Ghee	11,270	1,186	12,456
Total : Livestock Products	**11,270**	**1,186**	**12,456**
Gond	-	1,655	1,655
Wood	5,75,534	1,49,491	7,25,025
Tendu (leaves)	-	-	-
Katha	-	-	-
Lakh	-	-	-
Total : Forest Produce	**5,75,534**	**1,49,491**	**7,25,025**
Fish	-	-	-
Total : Fish	**-**	**-**	**-**
Total :	**22,15,651**	**17,24,597**	**39,40,248**

Source : Mandi Samiti, Regulated Agricultural Market, Lucknow.